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AMERICAN POMOLOGICAL SOCIETY.

PROCEEDINGS

OF THE

ELEVENTH SESSION

OF THE

AMERICAN POMOLOGICAL SOCIETY

HELD IN THE

POLYTECHNIC INSTITUTE, ST. LOUIS, MO.

SEPTEMBER 11-13, 1867.

REPORTED BY CHARLES D. BRAGDON.

PUBLISHED BY THE SOCIETY.

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CIRCULAR

OF THE

AMERICAN POMOLOGICAL SOCIETY.

THE undersigned give notice that the Eleventh Session of this Society will commence in the city of ST. LOUIS, Mo., on WEDNESDAY, SEPT. 11, 1867, at eleven o'clock A.M., at POLYTECHNIC HALL, and will continue several days. All Horticultural, Pomological, Agricultural, and other kindred institutions in the United States and British Provinces, are invited to send delegations as large as they may deem expedient; and all other persons interested in the cultivation of fruits are invited to be present and take seats in the Convention.

Among the prominent subjects which will come before the Society at this session will be that of the revision of the Society's Catalogue of Fruits. The Special Committee appointed for this purpose are now, with the various State and Local Committees, actively engaged in collecting such information as will aid in determining what varieties are best adapted to the different sections and districts of our country; and this information, in the form of reports, will be submitted to the action of the Convention. In compliance with a resolution passed at the last session of the Society, the several State Pomological and Horticultural Associations are requested to compile lists for their own States or Districts, and forward them, at as early a day as possible, to P. Barry, of Rochester, N.Y., Chairman of the Committee on the Revision of the Catalogue.

Members and delegates are requested to contribute specimens of the fruits of their respective districts, and to communicate in regard to them whatever may aid in promoting the objects of the Society and the science of American Pomology; and as the fruits of the South and South-west will then have attained their size, it is especially desirable that a grand display from these sections be made.

Each contributor is requested to come prepared with a complete list of his collection, and to present the same with his fruits, that a report of all the varieties entered may be submitted to the meeting as soon as practicable.

All persons desirous of becoming members can remit the admission fee to Thomas P. James, Esq., Treasurer, Philadelphia, who will furnish them with Transactions of the Society. Life-membership, ten dollars; biennial, two dollars.

Packages of fruits, with the name of the contributor, may be addressed as follows: "American Pomological Society, care of C. M. Saxton, corner Fifth and Walnut Streets, St. Louis, Mo."

MARSHALL P. WILDER, *President.*

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PROCEEDINGS

OF THE

AMERICAN POMOLOGICAL SOCIETY.

In accordance with the preceding call, members and delegates representing seventeen States and Territories met in the Hall of the Polytechnic Institute of St. Louis, Mo., September 11th, at 11 o'clock, A.M., 1867.

The President, Hon. MARSHALL P. WILDER, of Massachusetts, took the chair, and called the Society to order; immediately after which, HENRY T. MUDD, Esq., President of the Missouri State Horticultural Society, addressed the Society with the following

SPEECH OF WELCOME.

Mr. President, and Gentlemen of the American Pomological Society: —

On behalf of the Missouri State Horticultural Society and the many zealous horticulturists of this vicinity, it is my pleasing duty to welcome you on this occasion, — your first Convention on the western side of the mighty river which, coursing through the entire length of our country, gives a name to that great basin of territory known as the Mississippi Valley.

This would, in truth, be a pleasing task, if I could find words to express in fitting terms the welcome we feel.

Representing, as we do, a youthful people, encamped as it were on the very outposts of horticultural enterprise, on a

soil but recently wrested from the Indian savage, and but partially wrested from the dominion of nature, we welcome you as the representatives of a more advanced and improved horticulture; as the veterans, the representative men of the highest type of American civilization, the genuine horticulturist. We greet you with the liveliest hope that we shall make this Convention profitable to all. The counsels which your experience shall enable you to present, we hope to make advantageous to our Western enterprise; and we feel sure that some of you will be so deeply impressed, so far profit by an inspection of the almost unbroken forests of our hills and the boundless expanse of our prairies, that the vision shall refuse to "be down" either from your reveries by day or your dreams by night, until you shall be quite persuaded to exchange the worn-out and almost sterile soils that some of you now occupy, for a home on the virgin soils of what you have regarded as the far-distant West. Some of you will do this with each returning season, until the next generation occupying this point shall look very far toward sundown in the vain attempt to find another distant West.

Heartily do we welcome you for the beautiful contributions you bring to the exhibition of fruits on this occasion. We greet you with the choicest productions of our orchards, our gardens, and our vineyards. They are not all we had hoped to present. We think our apples were much injured by a severe frost, about the period of blooming. A drouth, long-continued and almost universal, has so much injured the growth of our orchard crops, as greatly to disappoint us in the contributions we hoped to make on this occasion.

Right cordially do we welcome you, in the fond hope that the social intercourse attending this meeting shall add much to human enjoyment and to the development of human sympathy; and that the discussions of this Convention shall do much to encourage and promote horticultural improvement, and extend the usefulness and influence of our associations.

At the closing of this address, ARTHUR BRYANT, of Princeton, Illinois, on behalf of the Illinois State Horticultural Society and the Pomologists of the Mississippi Valley, bade the American Pomological Society welcome to the West. He said: —

"We hope to learn something from those of you who come hither from the East. We admit the higher attainments, but we do not admit the higher zeal, of our Eastern friends. I most cordially welcome you to the Valley of the Mississippi, in behalf of the Pomologists of the State of Illinois."

Dr. C. W. SPALDING, of St. Louis, then, on behalf of the Mississippi Valley Wine-Growers' Association, welcomed the Society in the following words: —

Mr. President, and Gentlemen of the American Pomological Society: —

An agreeable duty has been imposed upon me, in being authorized to speak in behalf of the grape-growers of Missouri and the adjoining States, and in the name of the Mississippi Valley Grape-Growers' Association, to welcome you to our city. It is but a few months since our Association was organized, and the collection of wines which is brought together on this occasion, is the result of our first efforts at an exhibition. We ask you to accept it as an earnest of what we hope and intend in the future, when the number of our varieties will be largely increased, and the quality of many of these that are now before you will be much improved. How far we have succeeded in making our first attempt a creditable one, it will be your province to judge.

There is one cause which I may be allowed to mention here, that has greatly delayed the planting of vineyards in our State, and which was much less severely felt in the other wine-growing sections of our country than it was in our own. I allude to the late war. During the five years of its con-

tinuance, our labors in this direction were nearly paralyzed, and in some parts of the State wholly suspended. We have been, therefore, compelled to rely, for our present display, almost entirely upon the plantings made previous to the war. But, with the return of peace, our labors have been actively resumed, and the culture of the vine is now being rapidly extended. At this time, there are many acres of young vineyards which, while they may not make any material addition to the number of varieties previously cultivated, will largely increase the commercial product. Our future, then, is full of both hope and promise; and if, on some other occasion, it shall be our good fortune to again welcome you to our city, we shall not despair of being able to present a collection of wines that will be worthy of your attention.

Geographically, we are situated in the midst of a grape-growing region which is destined to become famous in history for the excellence and abundance of its wines, and whose products, at no distant day, will constitute an important element in the growing commerce of our city. Our climate and our soils are congenial to the vine, and the area of our lands suited to the production of wine, equals those of all the states of Europe together. East, west, north, and south of us, does the grape in some of its varieties successfully flourish; and the success which has already marked our earlier efforts has given an impetus to vine-culture, that, were accurate statistics collected at this time, would show an astonishing yearly increase.

In conclusion, Gentlemen, I bid you a hearty welcome to the Mississippi and its tributaries, whose vine-clad hills shall yet rival those of the Rhine.

I welcome you to a State which, having cast off the ancient shackles of slavery, which so long fettered her best energies, is now making rapid strides in her onward march towards social intelligence and political greatness (applause); whose undeveloped resources have long lain dormant and unappreciated; but which will, one day, become one of the most important States in the Union.

I welcome you to a city which, but a few years ago, was a small French town, standing upon the outer border of civilization, but which now contains nearly a quarter of a million of inhabitants, and ranks as the fourth city in the United States in population. I welcome you to her botanical garden, to her institutions of learning, and to her libraries.

I welcome you to our vineyards and to our wine-cellars, to our hearts and to our homes.

I welcome you to St. Louis!

PRESIDENT WILDER'S RESPONSE.

President Wilder responded to these speeches of welcome substantially as follows: —

Gentlemen representing Missouri, Illinois, and the Valley of the Mississippi: —

On behalf of the American Pomological Society, and in my own behalf, I bend in profound acknowledgment for this welcome of yours so sincerely and cordially tendered. Some of us have hastened home from foreign shores to receive this greeting and welcome. We are all most happy to be here to receive your salutations and congratulations — here in this great emporium, the half-way house of the Continent, — here on the Western side of the Father of the Waters, — here in this city, renowned for the intelligence, enterprise, and hospitality of its citizens, to co-operate with you in the advancement of our delightful art, and for the promotion of the objects of this association. Thanking you again for the courtesies extended to us, we will proceed with the business of the Assocation.

BUSINESS.

The President then said that he regretted to announce the absence of the tried and faithful Secretary of the Society, unavoidably detained by pressure of business, and hence it would be necessary to appoint a Secretary *pro tempore*.

Dr. J. A. Warder, of Cincinnati, nominated F. R. Elliott, of Ohio, as Secretary. Mr. Elliott was elected, and took his position at the Secretary's desk.

The Chair then appointed the following Committees : —

ON CREDENTIALS.

Norman J. Colman, Mo.; J. C. Perriam, Ill.; W. Heaver, Ohio; J. D. G. Nelson, Ind.; Geo. Ellwanger, N.Y.

ON BUSINESS.

J. A. Warder, O.; P. Barry, N.Y.; J. Knox, Pa.; L. D. Morse, Mo.; M. L. Dunlap, Ill.

ON FRUITS EXHIBITED.

Apples. — Arthur Bryant, Ill.; T. T. Lyon, Mich.; Geo. Ellwanger, N.Y.; J. D. G. Nelson, Ind.; T. McWhorter, Illinois.

Pears. — Chas. Downing, N.Y.; Robert Manning, Mass.; Robert Douglass, Ill.; Parker Earle, Ill.

Grapes. — J. Knox, Pa.; Geo. W. Campbell, O.; Geo. Husmann, Mo.; W. Heaver, O.

Native Fruits. — P. Barry, N.Y.; Charles Downing, N.Y.; Robert Manning, Mass.; Thomas Meehan, Pa.; J. A. Warder, O.; Geo. Husmann, Mo.; F. K. Phoenix, Ill.; J. D. G. Nelson, Ind.

Peaches. — Wm. Parry, New Jersey; E. S. Hull, Ill.; P. Barry N.Y.

During the absence of the Committee on Business, credentials of Delegates were presented, and the names and fees of members were received.

Dr. John A. Warder, Chairman of Committee on Business, reported the following as the order, which was adopted : —

Hours of Meeting. — To be at nine A.M. and two P.M. of each day during the sitting of the Convention.

Wednesday, P.M. — Annual Address of the President.

Election of officers for the ensuing year.

Address by Thomas Meehan, of Pennsylvania, on the diseases of the pear, which may be followed by discussion on the part of members.

Address by M. L. Dunlap, of Illinois, on the best mode of packing, shipping, and marketing of fruits.

Thursday, A.M. — Presentation of reports and resolutions.

Discussion by members on the subject of small fruits, in the following order: Raspberries, blackberries, gooseberries, currants, strawberries.

Thursday, P.M. — Reading of a paper on grapes, by William Saunders of Washington City, D.C.

Discussion on the varieties, culture, and diseases of grapes.

Friday, A.M. — Revision of fruit lists.

Miscellaneous business.

The Committee also recommend the adoption of a rule of former sessions of the Convention, which was adopted, as follows : —

In view of the limited time of the session, we recommend brevity in all remarks, and that no speaker be allowed to occupy more than five minutes at a time, nor, without leave, or for explanation, have a right to speak more than once upon any point under discussion.

A member regretted that there had been no provision for evening sessions, and was strongly in favor of such sessions.

The Chairman of the Committee said the Committee had concluded that business from nine A.M. to five P.M. would suffice; but the Society could, of course, change the programme at pleasure.

Other gentlemen suggested that there could be an adjournment to evening whenever desired.

President Wilder then said, — In accordance with the Constitution of this Society, I announce the following as a Committee on Nominations, to report candidates for the offices of the Society for the biennial term : —

F. Trowbridge, Conn.; E. Tatnall, Del.; Wm. Saunders,

D.C.; D. W. Kauffman, Iowa; W. C. Flagg, Ill.; Joseph Gilbert, Ind.; J. S. Downer, Ky.; Robert Manning, Mass.; T. T. Lyon, Mich.; L. M. Stone, Miss.; N. J. Colman, Mo.; —— Bouton, N.H.; J. M. Trimble, N.J.; H. E. Hooker, N.Y.; George W. Campbell, Ohio; Thomas Meehan, Pa.; and J. S. Plumb, Wis.

Adjourned to meet at 2½ o'clock, P.M.

AFTERNOON SESSION.

President Wilder called the Society to order at 3 o'clock, and proceeded to deliver his address.

PRESIDENT'S ADDRESS.

Gentlemen of the American Pomological Society: —

Once more, through His goodness whose promise of seed-time and harvest, cold and heat, summer and winter, day and night, has not failed, the revolving years have brought around the time for our meeting to renew the pleasant discussions of our favorite pursuit; — once more, through His mercy who healeth our diseases, I am enabled to stand before you, to offer you my congratulations, and to perform the duty devolved upon me by the office with which you have for so many years honored me.

The place where we are assembled — this great Western emporium, the half-way house of the continent; the time which has elapsed since the origin of the Society; and the interval since I last addressed you, protracted by my own ill-health, and the postponement of last year, — all concur in inducing me to lay before you a brief sketch of its history, of the work it has accomplished, together with some references to former suggestions and their practical results.

HISTORICAL SKETCH OF THE SOCIETY.

The first national assemblage, solely for the consideration of pomological subjects, was convened in Buffalo, on the first day of September, 1848, by the New-York State Agricultural Society. "Its objects, apart from general discussion, were to identify synonyms, to correct errors in the names of our fruits, and to establish a uniform nomenclature." The session lasted three days, which were occupied

with interesting discussions of many varieties of fruits; and the assembly resolved to perpetuate itself by an annual meeting under the name of the "North-American Pomological Convention."

On the 10th of October, 1848, another convention assembled in the city of New York, under the auspices of the American Institute, pursuant to a call signed in behalf of the Horticultural Societies of Massachusetts, Pennsylvania, New Jersey, and New Haven, and the American Institute. Among the objects to be proposed at this convention, were the following: —

"To compare fruits from various sources and localities, with a view of arriving at correct conclusions as to their merits, and to settle doubtful points respecting them.

"To assist in determining the synonyms by which the same fruit is known in different parts of the country.

"To compare opinions respecting the value of the numerous varieties already in cultivation, and to endeavor to abridge, by general consent, the long catalogue of indifferent or worthless sorts at the present time propagated by nurserymen and fruit-growers.

"To elicit and disseminate pomological information, and to maintain a cordial spirit of intercourse among horticulturists."

This convention adopted the title of "The American Congress of Fruit-Growers," and was presided over by the present incumbent of the chair. Its first work was the appointment of a Special Fruit Committee, of which the late A. J. Downing was Chairman, to report a list of fruits worthy of general cultivation. After a session of three days, spent in the discussion of this list, — which resulted in its adoption, with very few changes, — and in discussion of other varieties, the Congress adjourned to meet in the city of New York, on the first Tuesday of October, 1849.

But it was plain that, for the decision of a Pomological

Convention to carry due weight, there must be but one; indeed, that there could be but *one national* convention; and, accordingly, at the next meeting of the North-American Pomological Convention, in Syracuse, N.Y., September 14, 1849, resolutions looking to a union of the two conventions, introduced by Dr. Herman Wendell, were unanimously adopted; and a committee, of which Dr. Wendell was at the head, was appointed to attend the meeting of the Congress for that purpose. The proposition for union met a hearty response from the Congress, which appointed a committee, headed by Mr. Downing, to confer with that from the North-American Pomological Convention. At this conference, the utmost harmony and good feeling prevailed; and it was agreed, with the largest spirit of fraternity and good-will on all sides, that the North-American Pomological Convention should surrender its organization, and that the two associations should be consolidated as the "American Pomological Congress." At this meeting, a few concise by-laws were established, the select list was enlarged, a list of new varieties which promised well was adopted, and a beginning was made of a rejected list, by discarding, as unworthy of cultivation, twenty-seven varieties of apples and ninety-nine varieties of pears.

The first meeting of the united conventions was at Cincinnati, in 1850; the President, however, owing to a death in his family, was unable to be present, and Dr. W. D. Brincklé was chosen President. Since this meeting, the sessions have been held biennially, the next being at Philadelphia, in 1852, when Dr. Brincklé having declined a re-election, the former presiding officer was again called to the chair. At this session, the death of Mr. Downing, which occurred a short time previously, was noticed by a eulogy delivered by the President, at the invitation of the Horticultural Societies of Pennsylvania and Massachusetts. A Constitution and By-Laws were also adopted, and the name was changed to the "American Pomological Society." The session of 1854 was at Boston; 1856 at Rochester; 1858 at New York, when a

large number of names was added to the rejected list, making, with seventy-two pears discarded in 1854, and a few at other sessions, in all six hundred and twenty-five varieties of fruits. The session of 1860 was at Philadelphia; 1862 at Boston, when the present plan of the Society's Catalogue was adopted; and 1864 at Rochester.

In this brief outline of the history of the Society, I have indicated the more important measures which have been from time to time adopted for the promotion of its objects, in addition to the discussion of the various kinds of fruits at our meetings. These discussions have, at the last three sessions, been materially abridged, leaving the Catalogue to be perfected by the labors of the Special Committee in arranging and condensing the information furnished by the Local Committees. This is undoubtedly our best policy; and although, to the true pomologist, the study of the characteristics of varieties possesses a fascination hardly less than that of the delineations of human character to the novel-reader, I would recommend that, in future, still more time should be given to the subjects of culture, diseases, insects, the origin of varieties, the ripening and preservation of fruits, etc.; and, to this end, it is suggested that, in introducing new varieties, only those which give promise of peculiar excellence should be mentioned.

PRODUCTION OF NEW VARIETIES.

The great number of cultivators now raising new varieties of fruit from seed, especially of the grape, strawberry, and pear, gives promise of the richest gains to our stock of fine fruits. When we consider the numerous acquisitions already obtained, the multitude of accidental seedlings, and the thousands of hybrids produced by artificial means, now in the process of growth, our most sanguine hopes are awakened, and we feel that we are on the right track.

In no one of my previous addresses have I omitted to urge the importance of this branch of our science; and as

Van Mons advised his friends "to sow, to sow again, to re-sow, to sow perpetually," so now I repeat the words in which my views on this subject have heretofore been summed up; and as it was my first, so it shall be my continual and last advice, — "*Plant the most mature and perfect seeds of the most hardy, vigorous, and valuable varieties; and, as a shorter process, insuring more certain and happy results, cross or hybridize your best fruits.*"

The process of amelioration by sowing the seeds of successive generations, if founded in truth, is so long and tedious as scarcely to be worthy of trial. But we cannot define the exact truth of the theory; for we cannot estimate the disturbing influence of natural fertilization; and the impossibility of preventing this, where several varieties exist in the same ground, is apparent to all scientific cultivators. Under such circumstances, we could no more prevent an orchard of pears of different sorts from fertilization by the air and insects, than we could prevent a field of corn or a patch of melons, of different sorts, from mixing by the same process.

While most of our fruits have been produced by this process of accidental crossing, the number of finer sorts has been comparatively few and far between. We would not, however, discourage the planting of seeds of our best fruits, trusting to natural fertilization; but, to secure more rapid progress and better results, we must rely on the more certain and expeditious art of hybridization. By this means, we may, in a few years, produce such novel and desirable combinations as ages might not give us by accidental fertilization, or sowing seeds at random. In employing this agency, we only imitate nature; for, though the artificial process is but of recent origin, natural hybridization must have existed from the creation, and undoubtedly gave the first hint to man of the power within his reach. Nor can we doubt that the knowledge of this process is confided to man, by the Almighty Creator, that it may be developed to its utmost extent, or that, in pursuing it, we are doing his will and working with him. Here "the master-mould of Nature's

heavenly hand" is placed within our own, so that the judicious and skilful operator may raise new and fine varieties of fruits with as much success as the farmer can produce improved animals by the crossing of his favorite herds.

We are as yet unable to fix the exact limits within which hybridization may be effected; but we know that they cannot be determined by botanical classification. The rhododendron and azalea may easily be hybridized; but no one has yet succeeded in hybridizing with each other either the apple and the pear, or the raspberry and blackberry, which are more closely allied. The American and the European grapes are classed as distinct species, as are the apple and pear; yet the former are much nearer relations than the latter; and in the Miller's Burgundy, with its woolly foliage and hardy nature, we have a connecting link between the *Vitis vinifera* and *V. labrusca*. These considerations may aid in removing the doubts which have been entertained on theoretical grounds as to the reality of the hybrids said to have been produced between the two species.

We have learned some of the laws which control the process of hybridization, but others yet remain to be discovered; and this partial ignorance, bringing to the pursuit an element of uncertainty, gives to it also a zest and fascination as great as that of the games of mingled chance and skill which are so universally enticing to our race, but with infinitely more valuable results.

In raising new varieties, an object of special importance is, to extend the season of fine fruit, by producing varieties, ripening at its beginning and end, of equal excellence with those which now crown its height. How desirable to produce a pear as early as the Amire Joannet, or even the Doyenné d'été, with the size, and the cooling and refreshing juice, of the Urbaniste!

It may be that nature has set limits to our achievements; it may be that time is requisite to produce size in fruits, so that we cannot expect our earliest varieties to be as large as our later ones; still, we may make some approach toward

it; and he is a bold man who, in view of present attainment and promise, shall attempt to fix the bounds of our future acquisitions.

Before finally leaving this most interesting subject of the production of new varieties, I turn from these reflections which it has suggested, to repeat and re-enforce my conviction, that the shortest and surest road to improvement in fruits is by hybridization and cross-breeding. In verification of this opinion, I would refer to the remarkable success of Mr. Rivers, in England, by crossing the peach with the nectarine; also to Mr. Rogers's experiment with the grape in our own country. Of forty-five seedlings of the latter, many united the most valuable qualities of their parents in a high degree, and all to a greater or less extent; while not one was found possessing only the inferior qualities of the mother plant. How forcibly does this illustrate the beneficence of the Creator! how strongly does it encourage us to persevere in this good work!

In our experiments, we shall probably witness many disappointments; but, by carefully watching, we may arrive at improvements of which we have so little previous conception, that, when gained, they will seem to us like new creations. In the words of the late Dr. Lindley, "We have but stepped over the borders, and the whole field of hybridizing lies widely spread before us; its boundaries are lost in the horizon, and we shall find them still receding as we advance."

CHARACTERISTICS OF A GOOD TREE.

Ever since the formation of this Society, we have been discussing the best varieties of fruit; but we have never settled what constitutes a good variety. Let us give a moment to the consideration of the question, *What are the characteristics of a good tree and a good fruit, and what is their relative importance?*

I think we shall all agree that, to be desirable for general

cultivation, a tree must possess, *first*, health, or freedom from constitutional disease; *second*, hardiness, or the power of resisting the extremes of heat, cold, and drought; *third*, fertility, or productiveness of fruit; *fourth*, persistency of fruit, or power of adhering to the tree; *fifth*, vigor of growth, or productiveness of wood; *sixth*, persistency of foliage; and, *seventh*, a good habit of growth; and that those which unite these characteristics in the highest degree will be the most valuable. They are arranged in what is deemed the order of their relative value, though it is not easy to do this where they are mutually interwoven, and where all are necessary to some extent.

Health and *hardiness* are closely dependent upon each other. A diseased tree will be sooner injured or destroyed in an uncongenial climate than a healthy one; and, on the other hand, a tree cannot long remain healthy when injured by heat or cold; but health is placed first, because it is a universal characteristic: that is, a tree may be tender in one place, and perfectly hardy and of the greatest value in another, while a variety constitutionally diseased is valuable nowhere.

A good constitution for a tree is as essential as a good constitution for a man. Acclimation of a tender tree or plant is impossible. He who embraces this fallacy is like one building his house upon the sand, which will sooner or later be swept away by the vicissitudes of climate. The million cannot be educated to extraordinary care; therefore a primary object in the selection of a fruit-tree should be entire hardiness for the locality in which it is to be planted. Such a subject, although not itself producing the best fruit, will furnish the foundation upon which we may graft finer sorts, and thus render them durable,—

> "Like the oak that has braved the blast,
> All the better for the trial."

Closely connected with hardiness is *adaptation to soil*. A variety which easily accommodates itself to any soil, is of far

greater value than one which is difficult in its choice, and therefore confined within narrow limits.

Productiveness is placed after health and hardiness, because these are necessary to a fruitful tree, and before vigor, because, our object in planting being the fruit, productiveness of fruit takes precedence, in importance, of productiveness of wood. But, while a tree should be fruitful, it is desirable to avoid a habit of overbearing, which involves either the work of thinning the fruit, or else a large quantity of inferior fruit, and perhaps injury to the tree by exhaustion. The Beurré d' Anjou and Beurré Bosc pears possess the valuable property of bearing the greater part of the fruit singly and evenly distributed over the tree; and hence we find very few imperfect and no worthless specimens of these kinds. A variety which bears moderate annual crops is preferable to one which, like the Baldwin apple, produces a heavy crop in alternate years.

Persistency of fruit has not received the attention which its importance deserves; but it needs no argument to prove that an abundant crop is greatly lessened in value by its liability to fall from the tree. This may arise from two causes: first, *premature ripening* owing to disease, and so far connected with our first characteristic; or to heat, drought, or insects, to resist which its power depends on its hardiness: second, from *violence*, as in the Columbia pear, which is more subject to have its stem broken and to be blown off than most other pears. Trees with flexuose shoots will often retain their fruit when it is blown from those whose more rigid limbs offer a greater resistance to the wind; and a large fruit is not only more likely to be blown off than a small one, but to receive greater injury in falling.

Vigor of growth, or productiveness of wood, is to some extent antagonistic to productiveness of fruit, and, like that, it may be excessive. Especially in the vine is a moderate, compact, short-jointed growth, better than rampant overluxuriance.

Persistency of foliage is closely dependent upon our first characteristic; for one of the surest indications of a strong

and healthy constitution is abundant, deep-colored foliage, remaining upon the tree until frost.

The habit of growth may be upright, spreading, or drooping; symmetrical or unsymmetrical, straight or flexuose, stout or slender, pyramidal or round-headed, compact or open. The value of a good habit is well appreciated by the nurseryman who has endeavored to raise trees of an otherwise fine variety, of slender, straggling, almost pendulous growth, and, after great pains, succeeds in producing only a tolerable tree; while others naturally take such beautiful and symmetrical forms as at once give pleasure to the beholder. Not only is a crooked, straggling growth undesirable, but an erratic tendency to throw out a single strong shoot on one side of the tree, as in the Rostiezer or Andrews pear, is to be avoided. It may be remarked, however, that a tree of drooping habit, such as the Marie Louise and Winter Nelis pears, when grafted high, frequently exhibits a beauty of its own, like the weeping ornamental trees which adorn our lawns; but the true type of the pear-tree is pyramidal, and of this the Urbaniste is a beautiful and perfect example.

CHARACTERISTICS OF A GOOD FRUIT.

To the question, *What are the points of a good fruit?* we answer, *First*, the best quality; *second*, durability, or the property of remaining sound after being gathered; *third*, size; *fourth*, color; *fifth*, form; though I regard the last two as of nearly equal importance.

So long as we raise fruit to eat, we can have no hesitation in giving the first place to its *eating qualities*. No combination of other properties, however valuable, can atone for any considerable deficiency in this respect. Texture, juice, flavor, aroma, join to determine the quality.

Next in importance to quality is *durability*, or keeping; by which I do not mean late ripening, but the property, whether early or late, of remaining sound after being gathered. A habit of decaying at the core is a very great fault in a fruit;

and, for market, one which can be ripened in the house is much more valuable than one which, to be eaten in perfection, must be ripened on the tree, as is the case with the Rostiezer and other pears of the Rousselet family, the Early Harvest, and Williams apples.

The third requisite, *size*, is at once obvious. One of the highest-flavored new pears is Dana's Hovey; but its value would be many times multiplied could its size be doubled and its luscious character retained. Yet, while we seek for large fruit in preference to small, we should not forget that a fruit may be too large for table use. We have but one dessert pear of the size of the Duchesse d'Angoulême, and perhaps one is enough. But whether the size is large or small, it should be uniform.

Beauty of color and form, though less important than the preceding points, are still of great value; and, all other things being equal, that fruit which possesses them will justly receive the preference. The best colored pears are those with a brilliant red cheek; next to this comes a golden or cinnamon russet, then yellow, and last green.

Beauty of form has been less regarded than color; but a moment's observation will show its importance. Some pears are so beautiful in the curves which form their outlines, as at once to attract and please the eye; while others are entirely unprepossessing, if not positively ugly. The Beurré Bosc is the most perfect example of the former; and it is not only beautiful in itself, but pleases us as being the true pear type. After the pyriform comes the Doyenné type; and between the two we have all gradations, which are desirable in proportion as they approach the former. Next to the Doyenné is the Bergamot; then comes the globular; then the ovate, tapering towards the eye; and when this is conjoined with a knobby substance, it is worst of all.

These views are not put forth as by any means an exhaustive discussion of the subject, but rather as suggesting what might be done. My illustrations have been drawn chiefly from the pear, because that fruit has been the study of my

life; but what has been said will apply to the apple with little change; while, in the application of the same principle to the strawberry or the grape, we should reach a very different result. Perhaps you may deem it well, by committee or otherwise, to pursue the subject, and to establish a standard of excellence in all the different classes of fruit. Permit me also to repeat the recommendation that we should institute, for our guidance, "Rules of Pomology," similar to those some years ago adopted by many horticultural societies.

PRESERVATION AND RIPENING OF FRUIT.

I have recommended to your attention fruit-houses, built on scientific principles, for the preservation and ripening of fruit; but, though these are of undoubted value, it is still more desirable to secure varieties that will keep and mature without such costly and elaborate structures as, though within the means of the wealthy amateur, are beyond the reach of the million.

One of the greatest hindrances to the keeping of winter fruits is the warm weather often experienced soon after they are gathered. An effectual method of overcoming this difficulty would be of the greatest value to cultivators; and it is hoped that this desideratum will be supplied by the fruit-houses on Professor Nyce's system, which are now being established on a large scale in many of our cities; but, as this subject will probably be brought to your notice during the session, I forbear to speak further of it at present.

The preservation of fruit by drying, canning, etc., appears to me worthy of our attention. Apples and peaches are preserved by drying to a large extent in our country, and grapes and plums on a smaller scale; but I see no reason why they may not be prepared here in sufficient quantity to render us independent of foreign countries for our supply, especially on those parts of the Pacific coast where the European grape flourishes, and the hot, dry summers are similar to those of the countries from which we receive our

raisins and figs. Indeed, the making of raisins has already commenced in California.

THE GRAPE.

In the whole circle of pomological progress, there is no branch which excites so much interest, or gives such favorable promise, as the culture of the grape. At last, the vine which has been so much neglected or persecuted, from fear of producing an intoxicating beverage, is becoming the great object of attraction. From the Lakes to the Gulf, from the Atlantic to the Pacific, large tracts of land are being devoted to its growth. Companies and villages are springing up, wealth and enterprise are on the alert, in the belief that this department of fruit-culture is to be the most profitable. If the same enterprise continues in our land for the next half-century, the words of the Psalmist will be realized: "Thou hast brought a vine out of Egypt; thou preparedst room before it, and didst cause it to take deep root, and it filled the land. The hills were covered with the shadow of it, and the boughs thereof were like the goodly cedars. She sent out her boughs unto the sea, and her branches unto the river."

Throughout an extent of territory running over twenty-five degrees of latitude, and from ocean to ocean, the native vine grows spontaneously; is as hardy as the forests it inhabits, and ripens as surely as the apple or any other fruit. All localities are not alike favorable for its growth; but it may be assumed as a general law, that where nature has planted any of our wild species, there other new and improved sorts may be raised by hybridization, either natural or artificial, which will be equally as well adapted to that territory. The Catawba, Isabella, Concord, Diana, Hartford Prolific, Creveling, and even the Delaware, if it be not, as some have supposed, a distinct species, are illustrations of the improvement of the species, or removal from the original type. Every year adds new and valuable varieties of such as are adapted

to general cultivation or to particular localities. Missouri, Ohio, Illinois, Pennsylvania, New York, and New Jersey, have vineyards embracing thousands of acres. Other states have less quantities; while California, in whose favored climate the European grape flourishes, has already commenced the exportation of wines and brandies to the Old World. Of the quantity of wine manufactured in the United States, or the crop of grapes, or the territory devoted to vineyards, I have not the statistics; but Mr. Husmann, in his late work, estimates that in the season of 1865 there were raised and sold in the single town of Hermann, Missouri, two million grape-vines; and these were not sufficient to meet the demand. The same writer says: "I think I may assert, that ten years ago, the vineyards throughout the whole country did not comprise more than three to four thousand acres. Now, I think I may safely call them over two millions of acres." And it is estimated that, at the present rate of planting, in a few years we shall have as many grape-vines in the United States as in all Europe. That this marvellous expansion of grape culture has not been without results, is shown by the fact, that ninety-five tons of grapes have been shipped from a single city in Ohio in three days. In an estimate by Mr. F. R. Elliott, Secretary of the Northern-Ohio and Lake-Shore Grape-Growers' Association, we are informed, that there are seven thousand acres now set with grapes within the bounds of that Association. The same region, in 1865, produced two hundred and seventy-nine thousand gallons of wine, worth, at wholesale prices, between five and six hundred thousand dollars. Mr. Elliott says: "Had the entire grape crop of that year been made into wine, the product would have been two million gallons."

In regard to the wines of our country, I may be permitted to remark, that, from many comparisons made between the better samples of American wine, on exhibition at the Paris Exposition, with foreign wines of similar character, as well as from the experience of many European wine-tasters, we have formed a higher estimate of our ability

to make good wines than we had before entertained. And from investigations in vine culture, we are now more confident than ever, that America can and will be a great wine-producing country.

All that is necessary for us to rival the choicest products of other parts of the world will, with experiments and practice, be attained. We have several excellent varieties of the grape, and to which constant additions are being made. These are born on American soil, and suited to it, — a soil and temperature extensive and varied enough for every range of quality and quantity. He, therefore, who shall discover a plat of ground capable of yielding a "Johannisberger," a "Tokay," or a "Chateau Margaut," will be a public benefactor; and somewhere between the lakes and the gulf, and the two oceans that circumscribe it, we shall find it.

History informs us that "the planting of vineyards in Italy had so much increased about A.D. 85, that agriculture was thereby neglected, on which account Domitian issued an edict prohibiting any new vineyards to be planted in Italy, and ordered one half of those in the provinces to be cut down." With our utmost zeal, it will be long before such an enactment can be needed in the United States.

The Isabella was introduced in 1818, and the Catawba at about the same time; and these were our only good grapes until the Diana, which was first shown in 1843, but not appreciated until some years later. The Concord was first exhibited in 1853, the Rebecca in 1856; the Delaware was first brought to the notice of this society in the same year; and the new kinds introduced since that time have been so many and so good, that we can already hail the advent which we then foresaw, when grapes not inferior to the European varieties shall be raised in our gardens, furnishing fruit for the table a large portion of the year. Now that the fixed original habit of the grape is broken, and the tendency to variation has come into play, and the possibility of hybridization between the European and native sorts is established

beyond a doubt, we may expect the appearance, every year, of many new varieties, from which we shall be able to select those possessing every desirable quality. In view of the great and growing importance of this interest, we cannot employ our time more profitaby than in such discussion of the culture and best varieties of the grape as will elicit the information gained and the improvements made, the difficulties encountered, and the means adopted to overcome them.

GENERAL VIEW OF THE WORK OF THE SOCIETY.

In taking a general view of the work of this society, we cannot but be struck with the richness, — the embarrassing richness I may say, of the material presented to us. In making up our Catalogue, we have been obliged, in every species, to omit, for some slight deficiency, varieties possessing so many good qualities as almost to grieve us to pass them by. It has been objected to Pomological Conventions, that the testimony to the qualities of the different sorts of fruit is so conflicting as greatly to impair their value; but we believe that, to one accustomed to weighing evidence, the marvel will be, not that there should be discordant testimony, but that, in our vast country, with its endless diversity of soil and climate, there should be so many kinds whose uniform excellence is either attested unanimously, or with barely exceptions enough to prove the rule. There may be some here who remember a motion, at the first meeting of the Congress of Fruit-Growers, for a committee to report a list of one hundred varieties of pears for general cultivation. The proposal was received with surprise at its audacity, if not with a stronger feeling at its folly; for had we not been told, by novices who thought they had got hold of an idea which more experienced cultivators had failed to discern, that there were not above twenty pears of any merit? Yet the list of twelve pears accepted at that meeting had in 1856, only eight years after, grown to ninety-four, recommended for general cultivation either on pear or quince, or as promising well.

The progress we have made is nowhere more forcibly shown than by the fact that, while thus increasing our list, the standard of excellence has not been lowered, but raised. Twenty-five years ago, every new fruit of good quality was at once recommended for more or less extensive cultivation. If a good bearer, it was so much the better; if a hardy and vigorous tree, better still; but quality was all that was deemed indispensable, while to-day a fruit must combine, in a good degree, all these, and many other points, or be at once passed by; and many of those then thought most desirable are now on the rejected list. We hear no more of varieties which, though not of sufficient excellence for extensive cultivation, were yet so good that a single tree should be in every large collection. A sort worthy of no more extensive cultivation than that is not worth growing at all, unless it may be, as in a museum, for its historical value.

Our society has brought together, from more than thirty states and provinces, the most intelligent, experienced, sagacious, and skilful cultivators who have taught each other, and made the knowledge of one the property of all. Its example has led to the formation of similar associations in England, France, and Belgium, and of local associations in our own country. It may fearlessly ask to be judged by its published proceedings, which, in their reports of discussions, reports of committees, catalogues, and papers on various pomological subjects, embody, in a condensed form, such a mass of information on this science, the best thoughts of the best cultivators throughout our land, as is possessed by no other nation on earth. Instead of the fifty-four varieties recommended in 1848, our catalogue now contains the names of five hundred and sixty-one fruits; viz., 178 apples, 122 pears, 43 cherries, 55 peaches, 6 nectarines, 11 apricots, 33 plums, 3 quinces, 18 native grapes, 22 foreign grapes, 18 currants, 13 gooseberries, 12 raspberries, 2 blackberries, and 25 strawberries; and the list of one hundred and twenty-six varieties, rejected in 1849, has grown to six hundred and twenty-five; viz., 126 apples, 351 pears, 5 apricots, 32 cher-

ries, 2 grapes, 31 plums, 3 raspberries, and 75 strawberries; making a total of *one thousand one hundred and eighty-six varieties of fruit* on which the society has set the stamp of its approval or rejection.

While the results achieved by other societies are of but local value, ours are a common possession to every inhabitant of our wide land. And if asked, what is the most important measure ever adopted, I should point to the Catalogue, first suggested by the Chairman of the General Fruit Committee, the late Mr. Walker, in 1858, consummated mainly by the intelligent, persevering labors of his successor, Mr. Barry, and adopted by the society in 1862. Into it is condensed the substance and essence of our proceedings and the various state reports. At present, it is necessarily in an incomplete but progressive state, and is intended especially for the use of the members of the society; but with every revision, it may be expected to approximate more nearly to perfection.

Among other objects specified in the circular by which the first meeting of the Congress of Fruit-Growers was called together, is this: "To maintain a cordial spirit of intercourse among horticulturists;" and, although last mentioned, and to be effected rather by incidental and indirect than by direct means, it has not been forgotten, as the joyous greetings and kindly partings, the generous hospitalities given and received at our meetings, bear witness. Nor has the influence of these amenities ceased with the close of our sessions, but remained with us, in pleasant anticipations of the time when we should again come together in mutual congratulation, as we do to-day.

MORAL AND SOCIAL INFLUENCES.

I have urged, among the advantages of our pursuit, that it ministers to the comfort and happiness of the human race, not merely by gratifying the sense of taste, but that it strengthens local attachments, and multiplies the joys of

home; promotes industrial happiness and the love of kindred and country; sweetens the social relations of life, and opens the heart to the study of nature in her most beautiful, bright, and fascinating moods. And may I not now add to these benign influences what experience has taught me of the power of these studies to soothe and cheer in sickness and suffering, and express the hope, that in those hours of darkness and sadness, from which none are exemt, you may, as you stroll among the trees which your own hands have planted, and which you almost fancy to be endowed with human attributes, and to be susceptible to sympathy and moral influences, find the truth of these words, spoken of another, —

"The pulse of dew upon the grass kept his within its number,
And silent shadows from the trees refreshed him like a slumber."

DECEASED MEMBERS.

But while we rejoice in the progress of the society, we are reminded of other changes since its formation, — of those who started with us, but have ceased from among us. Of the nine members of the Special Fruit Committee which laid the foundation of our Catalogue, four — Downing, Lovett, Hancock, and Eaton — were taken from us in less than seven years from our first meeting. And others there are, whose graves, as they have fallen from time to time, we have strewed with sweet and bitter flowers, but not until we recall them together — Brincklé, Kennicott, Walker, French, Ernst, Reid, Saul, Frost, Beeler, Bergen, and many others who took a less prominent part in the society — do we realize the loss we have sustained. We count it among the choicest blessings of our lives, to have enjoyed the friendship of so many wise and good men, whose talents would have given them eminence in any pursuit to which it had pleased Providence to call them. We honored and admired them for their skill as horticulturists, but still more we loved them as men; we

would cherish their memories now that they are departed; and here, amid the drought and blight and decay incident to all earthly things, we are cheered by the hope that we shall one day join them in that better country, —

> "Of fairer valleys and streams than these,
> Where the river of God is full of water,
> And full of sap are his healing trees."

OUR COUNTRY.

How great the changes in our country since I last stood before you! How have our souls been moved with the extremes of joy and sorrow! "now touching the very skies, now sinking into the depths of ocean." Then we were in the midst of a civil war of unparalleled magnitude, and these were the words in which I addressed you: "The cloud that overshadows is indeed dark and foreboding, yet we trust that it will retire, gilded with the bow of promise, and radiant with the hope of a brighter to-morrow. We believe, that he who rules in mercy as well as in justice, will, in the end, bring our beloved nation out of all its troubles, and make us a wiser and better people; that he will yet make us one in interest and destiny; a people whose love of self-government, union, and strength, shall, in the future, as in the past, be the wonder and admiration of the world."

Let us hope that our association, whose art is pre-eminently one of the arts of peace, may have a part in this glorious work of thus binding our nation together with indissoluble bonds of brotherhood and love. Let us trust, that with that skilled, intelligent, and instructed labor which is indispensable in any branch of horticulture, pomology shall make such progress throughout our country, that soon our meetings may be held in the cities of the South; and that, to them, to add to the fruits of Northern climes, men shall come up, like the searchers of the promised land of old, laden with grapes and pomegranates and figs.

CONCLUSION.

GENTLEMEN, — The review which we have taken of our work is desultory and imperfect; but I think it has shown that our plan is the right and true one, and that no radical change is needed. Much time has been unavoidably consumed in learning how to work, but we have now thoroughly mastered that part; and, with such modifications as your wisdom may suggest and your judgment approve, we may confidently hope, at each successive meeting, to approach nearer to perfection, until our ultimate object is attained, and fine fruit, "the flower of commodities," "the most perfect union of the useful and beautiful that the earth knows," shall crown in rich profusion the table of every inhabitant of our beloved land.

The conclusion of the President's address was followed by enthusiastic applause, after which the arrival of the Treasurer, Thomas P. James, Esq., was announced, and the Society listened to the

TREASURER'S REPORT.

To the President and Members of the American Pomological Society:

GENTLEMEN, — The Treasurer of your Association presents his Report for the term 1864–1865, viz.: —

STATEMENT.

RECEIPTS.

1864.					
Sept.		To Balance on hand per Report 1864.....	$186	25	
1866.					
Sept.		" Cash received from 24 Life-Members, $10.00..	240	00	
		" " " " 153 Term " 2.00..	$306	00	$732.25

EXPENDITURES.

1864.					
Sept.	8	By Cash paid Ellwanger & Barry by order of the President	$19	30	
Dec.	14	" Cash paid for printing Billheads.....	8	50	
1865.					
May	19	" " " Jas. Vick by order of the President. Composition, Press-work, and Tax Transactions.....$156.87 Paper for Transactions..... 77.25 Binding the Transactions..... 7.25 Composition, Press-work, and Paper for Report of Fruit Committee, as per estimate given Mr. Barry..... 175.00	416	37	
Mar.	4	" Cash paid Freight on Transactions from Rochester	4	50	
		" Cash paid Express Charges on Transactions from Rochester.....		90	
1866.					
Sept.		" Cash paid sundry Postages during the term...	16	75	
		" Balance now on hand.....	265	93	$732.25

Respectfully submitted,

THOMAS P. JAMES, *Treasurer.*

The report was accepted. The Treasurer added that there were some hundreds of copies of the Society's Transactions on hand, to be distributed as ordered.

ELECTION OF OFFICERS.

Mr. George W. Campbell, of Ohio, Chairman of the Committee on Nominations, reported: —

For President — Hon. Marshall P. Wilder, of Massachusetts. (Applause.)

For Vice-Presidents — L. F. Mellen, of Alabama; J. H. Ingram, of Arkansas; R. T. Perkins, of California; Charles Pauls, of Colorado; Daniel S. Dewey, of Connecticut; Edward Tatnall, of Delaware; Wm. Saunders, of District of Columbia; Joseph D. Ward, of Florida; L. E. Berckmans, of Georgia; Arthur Bryant, Sen., of Illinois; J. D. G. Nelson, of Indiana; D. W. Kaufman, of Iowa; Charles B. Lines, of Kansas; Lawrence Young, of Kentucky; H. A. Swasey, of Louisiana; S. L. Goodale, of Maine; C. M. Hovey, of Massachusetts; W. C. Wilson, of Maryland; Nicholas Waugh, of Montana; Hugh Allen, of Montreal, C.E.; Wm. Bort, of Michigan; D. A. Robertson, of Minnesota; J. M. Stone, of Mississippi; B. F. Edwards, of Missouri; Frederick Smyth, of New Hampshire; Charles Downing, of New York; Wm. Parry, of New Jersey; D. H. Link, of Nebraska; Dr. Ruyther, of New Mexico; Wm. L. Steele, of North Carolina; I. A. Jarden, of Ohio; Charles Arnold, of Ontario Prov., C.W.; Simon Francis, of Oregon; Robert Buist, of Pennsylvania; Wm. Sumner, of South Carolina; M. S. Frierson, of Tennessee; Wm. Watson, of Texas; J. E. Johnson, of Utah; Z. Jacobs, of West Virginia; J. C. Plumb, of Wisconsin; E. C. Worcester, of Vermont.

For Treasurer — Thomas P. James, of Philadelphia, Pa.

For Secretary — F. R. Elliott, of Cleveland, Ohio.

For Executive Committee — President and Vice-Presidents, *ex-officio;* M. B. Batcham, of Painesville, Ohio; Geo. Thurber, of New York, N.Y.; J. E. Mitchell, of Philadelphia, Pa.; W. C. Flagg, of Alton, Ill.; J. F. C. Hyde, of Boston, Mass.

For General Fruit Committee — P. Barry, Chairman, of

Rochester, N.Y.; J. W. Adams, of Portland, Maine; John Copp, of Milton Mills, N.H.; J. F. C. Hyde, of Boston, Mass.; J. H. Bourne, of Providence, R.I.; D. S. Dewey, of Hartford, Conn.; E. C. Worcester, of Thetford, Vermont; W. Brown Smith, of Syracuse, N.Y.; I. P. Trimble, of Newark, N.J.; A. W. Harrison, of Philadelphia, Pa.; Edward Tatnall, of Wilmington, Del.; J. S. Downer, of Elkton, Ky.; Geo. W. Campbell, of Delaware, Ohio; W. H. Loomis, of Indianapolis, Ind.; M. L. Dunlap, of Champaign, Ill.; William Muir, of Fox Creek, Mo.; T. T. Lyon, of Plymouth, Mich.; Oliver P. Taylor, of Loudon Co., Va.; W. E. Wilson, of Wheeling, West Va.; W. L. Steele, of Rockingham, N.C.; Wm. Schley, of South Carolina; P. J. Berckmans, of Augusta, Ga.; Wm. Heaver, of Nashville, Tenn.; M. W. Phillips, of Chatawa, Miss.; Mark Miller, of Dubuque, Iowa; Daniel Harper, of Harpersville, Ala.; H. A. Swasey, of Tangipahoe, La.; J. C. Plumb, of Milton, Wis.; L. F. Laudergue, of San Jose, Cal.; John Saul, of Washington, D.C.; J. Robertson, of St. Paul, Minnesota; Wm. Watson, of Texas; J. H. Ingram, of Arkansas; C. B. Lines, of Kansas; Charles Arnold, of Ontario, C.W.; Hugh Allen, of Montreal, C.E.

For Committee on Native Fruits — P. Barry, of New York; Charles Downing, of New York; Robert Manning, of Massachusetts; Thomas Meehan, of Pennsylvania; J. A. Warder, of Ohio; Geo. Husmann, of Missouri; F. K. Phœnix, of Illinois; J. D. G. Nelson, of Indiana.

For Committee on Foreign Fruits — George Ellwanger, of Rochester, N.Y.; C. M. Hovey, of Boston, Mass.; Robert Buist, of Philadelphia, Pa.; E. S. Hull, of Alton, Ill.; Wm. Muir, of Fox Creek, Mo.; D. S. Dewey, of Hartford, Conn.; P. J. Berckmans, of Augusta, Ga.

For Committee on Synonyms and Rejected Fruits — J. S. Cabot, of Salem, Mass.; J. J. Thomas, of Union Spring, N.Y.; J. D. G. Nelson, of Fort Wayne, Ind.; J. A. Warder, of Cincinnati, Ohio; M. L. Dunlap, of Champaign, Ill.; J. A. J. Creswell, of Elkton, Ind.

For Committee on Revision of Catalogue — The President, *ex-officio;* P. Barry, of Rochester, N.Y.; J. A. Warder, of Cincinnati, Ohio; Charles Downing, of Newburgh, N.Y.; C. M. Hovey, of Boston, Mass.; J. Knox, of Pittsburgh, Pa.; W. C. Flagg, of Alton, Ill.; George Husmann, of Hermann, Mo.

The report was accepted.

The President said that the Constitution requires an election by ballot, but that it had been the custom for the Society to authorize the appointment of some members to deposit the ballot of the Society.

On motion of Mr. Barry, the President was authorized to so appoint; and he designated Mr. Campbell to deposit the ballot, and the officers, as reported, were accordingly elected.

President Wilder then said, —

Gentlemen, — I return you most sincere thanks for the honor you have conferred upon me. For eighteen years I have occupied the chair of this Society, as its President. I have several times tendered my resignation. I see before me men better qualified to discharge the duties of the Chair than myself; but, governed by the partiality of friends whom I respect, I have hitherto withdrawn my resignation, and again accept the office to which you have so generously elected me.

I love to be associated with you. From my earliest manhood I have loved rural life. I have loved everything pertaining to rural life and rural happiness. . I have loved the verdure and vernal odors of the spring, the beauty and growth of nature during the summer solstice, the golden harvests and the perfected fruits of the yellow autumn; and I love to be honored and trusted by you in this relation, and in connection with these pursuits. To these my whole life has been devoted. I have climbed to the summit of the hill of life, and am now descending upon the other side. Soon I shall reach the silent valley, and be buried beneath its sod. I hope it may be said of me, when I am gone, that I have labored zealously to elevate my vocation and race, and add something to the stock of human happiness.

REPORT OF THE COMMITTEE ON CREDENTIALS.

Norman J. Colman, of the Committee on Credentials, reported delegates as follows : —

Essex Institute, Salem, Mass. — Robert Manning.

MASSACHUSETTS.

Massachusetts State Horticultural Society. — Hon. Marshall P. Wilder, Robert Manning, J. W. Manning.

PENNSYLVANIA.

Pennsylvania Fruit-Growers' Society. — J. E. Mitchell, A. W. Harrison, Josiah Hoopes, Thos. Meehan, Wm. Saunders, Thos. Harney, Rev. J. Knox, Rev. J. Colder, Chas. Harman, F. F. Merceron.

Pennsylvania Horticultural Society. — T. P. James, W. L. Schaffer, H. A. Dreer, R. Buist, C. Harmar, Josiah Hoopes, T. Meehan, W. Parry, W. Hacker, E. Satterthwait, S. W. Noble, C. P. Hayes, J. McGowan, Coleman Fisher, Wm. Saunders, A. W. Harrison, J. S. Haines, Dr. J. S. Houghton, J. E. Mitchell.

ILLINOIS.

Illinois State Horticultural Society. — Arthur Bryant, S. G. Minkler, Paul R. Wright, Robert Douglass, Parker Earle, D. B. Wier, F. A. Holcomb, M. L. Dunlap, W. R. Flagg, Charles D. Bragdon, F. M. Hunter, H. D. Emery, V. K. Deyo, E. A. Riehl, A. R. Whitney, James E. Starr, Augustus Starr, Dr. Hull, John M. Pearson, T. C. Cochran, Jonathan Periam.

South Pass Horticultural Society, Ill. — Parker Earle, Thos. A. E. Holcomb, A. M. Lawyer, P. R. Wright.

Makanda Horticultural Society, Ill. — V. K. Deyo.

INDIANA.

Indiana State Horticultural Society. — J. D. G. Nelson, A. Furnas, J. C. Teas, E. Y. Teas, J. S. Dunlap, J. H. Nicholson, Jos. Gilbert, Seth W. Pearson, T. A. Bland, J. T. Francis, H. J. Rudesell, John G. Heinte.

KENTUCKY.

Kentucky State Pomological and Horticultural Society. — Leon R. Huggins, J. S. Downer, of Elkton, Ky.

IOWA.

Kekouk (Iowa) Horticultural Society. — David Reddington, Geo. C. Hilton, B. S. Merriam, G. Hunsaker.

South-Western Horticultural Association. — Jas. B. Laughlin, Samuel H. Keridlebaugh.

Iowa State Horticultural Society. — D. W. Kauffman, President of that Society, of Des Moines; Mark Miller, of Des Moines; Samuel Foster, of Muscatine; George O. Hilton, of Keokuk; B. S. Merriam, of Keokuk.

NEW YORK.

Queen's County (N. Y.) Agricultural Society. — George R. Underhill.

Fruit-Growers' Society of Western New York. — E. A. Bronson, of Geneva; H. E. Hooker, P. Barry, George Ellwanger, and E. W. Sylvester, Lyons; and W. B. Smith, Syracuse.

New York State Horticultural Society. — W. Brown Smith and Eli A. Bronson.

New York State Agricultural Society. — Charles Downing, P. Barry, W. Brown Smith, E. Ware Sylvester, Eli A. Bronson.

Newburg Bay (N. Y.) Horticultural Society. — Chas. Downing, Charles Dubois, Henry Cornell.

NEW JERSEY.

New Jersey State Agricultural Society. — E. Williams, Isaac P. Trimble, P. T. Quinn, Robert S. Swords.

Vineland Agricultural and Horticultural Society. — I. P. Trimble.

WASHINGTON, D.C.

Department of Agriculture, Washington City. — William Saunders.

MISSOURI.

Horticultural Society of Pike County, Mo. — Wm. Stark.

Jefferson County Horticultural Society. — I. W. Guy, D. W. Bryant, W. S. Jewett, Samuel Wright, H. S. Christian, B. Hiney, John L. Thomas, Charles Peabody, Dr. W. S. Dyer, J. Edward Walker.

N. E. Mo. Horticultural Society. — S. F. Taft, W. L. Youse, A. Tavener, N. O. Miller.

RHODE ISLAND.

R. .I Society for Encouragement of Domestic Industry. — Joseph H. Bourn, C. B. Manchester, Silas Moore, William B. Spencer, Ed. D. Peane.

DELAWARE.

Delaware Horticultural Society. — Edward Tatnall, Joseph Binghurst, John R. Binghurst, William M. Canby.

OHIO.

From the Ohio Pomological Society. — Dr. J. A. Warder, M. B. Bateham, George W. Campbell, William Heaver, H. B. Lum, J. M. McCullough, J. S. Cook, William Mears, F. R. Elliott, F. Pentland.

Miami Township Horticultural Society. — W. E. Mears.

Thomas Meehan, Esq., Editor of the Gardeners' Monthly, Philadelphia, was then invited by the Society, through the President, to read his views on the

DISEASES OF THE PEAR.

I have been asked by your honored President and my esteemed friend, Marshall P. Wilder, to prepare, for your consideration, a few ideas in reference to the diseases of the pear. I do not feel that I can add much of any thing to the knowledge of leading horticulturists on this subject. But always willing to endeavor to be useful in any direction my fellow-gardeners may think I can be, I have much pleasure in submitting to your better judgments the following remarks: —

Under the general name of disease, we understand all those affections which interfere with the aim of the fruit-grower — a good crop of perfect fruit. If a tree be perfectly healthy to all appearance, and yet bear nothing, although at an age and under circumstances that others of the same age or kind ought to bear, we treat the tree as if there was "something wrong" with it, and it is really, so far as our aim is concerned, in a diseased state.

So far as I have been able to observe, the chief pear diseases in the Eastern States are: 1, *Fire blight;* 2, *Canker;* 3, *Leaf blight;* 4, *Knotting or hardening of the fruit;* 5, *Cracking;* 6, *Debility.*

Fire blight we all know by its effects. Whole branches, often nearly the whole tree, will die in a day, apparently as if struck by lightning, and there are not wanting those who refer the loss of the tree to that cause. There is no doubt but there are several distinct diseases, all grouped together under the general name of "Fire blight." Thus we have *insect blight, frozen sap blight,* and several others, all with very nearly the same effect, namely, the sudden death of leaves and branches, just as we see a dead branch lying under a tree. It may have been done by a knife, a saw, or

a hatchet, but yet from totally different causes; but the effect is the same — sudden death.

The *insect blight* is caused by the *Scolytus Pyri*. The operations of this insect destroy the bark immediately about the place of its operations, and all above dies as if the stem had been girdled. This is, indeed, the explanation; the branch dies because it is, in effect, girdled.

Fire blight exists terribly in vicinities where this insect does not, and in any event, blight from this cause is confined to tolerably small branches.

Frozen sap blight is also confined to comparatively young branches. I have never been able to find a single case, which I should refer to this section, where the disease originated under a coat of old dead bark. The philosophy of this disease is, that death ensues in the particular parts simply by a failure in the system to maintain, just in that spot, *heat enough to sustain life*. I may here state, that it is essential to the existence of a plant, as of an animal, that in the severest weather heat should be maintained. To maintain heat, there should be a circulation of the sap. To maintain circulation, there must be evaporation; and to supply evaporation, the plant must draw in a stock of moisture, no matter how severely the soil may be frozen. It is a vulgar error, that the sap of a tree "goes down" in winter: it is a pernicious error, and we shall never get at a true theory of growth or disease so long as it continues. If there were an organized hierarchy amongst horticulturists, as amongst a section of theologians, I would pray, that all who held this dangerous doctrine should be excommunicated with bell, book, and candle, and with all the penalties thereunto attached.

Now, frozen sap blight occurs in this wise: When a plant is under a very low temperature, evaporation is going on at an enormous rate. If, at this time, any particular part of the plant should lose its moisture faster than the roots can supply it, that part loses its vital heat, and either dies at once, or has the vitality so much weakened that it dies under

the first severe trial. This principle is beautifully illustrated in nursery rows of fruit-trees. Sometimes we find rows of apple-trees split, for a few inches from the ground, on the sunny side. Near the ground, when the sun in winter strikes it, there is a pretty strong heat; evaporation immediately ensues, and the root, perhaps encased in frost, having to expend a considerable portion of its heat in thawing moisture from the frozen rocks, cannot supply moisture and with it heat — for heat is no use to a plant, except in connection with moisture — fast enough for the evaporation. Hence, with loss of heat ensues *contraction* — that is, the bark splits. And you will find, in all cases of *frozen sap blight*, it takes place only in very porous wood or bark, or in those places exposed to the sun, where heat was suddenly abstracted by evaporation. In porous bark, which will give a little by contraction without bursting, we do not always find it entirely destroyed, while often the wood beneath will be entirely dead; but when the time of trial comes, say a very hot sun in a summer's day, and the sap cannot be drawn up fast enough through the weakened tissue to please the views of the sun's rays, the whole system suddenly bursts, and the injured branch gives up the ghost.

But the injury from "insect" and "frozen sap" will not begin to weigh with that of "fire blight" proper, which carries off the largest branches of your trees, through the thick bark of which your *Scolytus Pyri* could not operate, nor the hottest suns or severest frosts injure by evaporation. Here, I am satisfied, we have to deal with a parasitic fungus; and in this place let me aim a blow at another popular fallacy, which, unlike the winter tree sap dormancy, has been abandoned by the learned, but which the multitude still cling to, namely, that fungi only attack *diseased* vegetation. Most of them feed on debris. Like the respectable man, they want their food nicely prepared for them; but there are the wild beasts amongst them, as in the animal world, and these are not so particular. They swallow their food alive. I will not occupy time here to prove this. Those who think

parasitic fungi will not attack healthy vegetation, are referred to the writings of our own great cryptogamist, Rev. M. A. Curtis, of North Carolina, or England's celebrated botanist, Rev. M. A. Berkeley. The fungus which I think I may say causes fire blight, germinates either in or on the bark, pushing its way along through the tissue, causing fermentation and death as it goes. It seems also to push into the wood, destroying it in the same way. Sometimes it does not work entirely around the branch, hence you will not find the leaves all die away suddenly. A little sap can rise through the uninjured parts, and the leaves only die, some wholly, some partially, by degrees; but when the bark all the way round gets eaten away, *becomes girdled*, no sap can flow up, and the whole branch dies at once for want of sap, just as if cut away or thrown into the fire.

This explanation of the cause of fire blight points, at the same time, to the remedy. These minute plants propagate themselves by seeds (called spores), just as larger plants do. They must develop themselves, however, some time before they perfect reproductive organs; and if, therefore, the crop is cut away and destroyed before it can mature spores, we stop the propagation. Cutting away and burning the affected parts is therefore the best remedy to stop the progress of the fire blight.

Canker is not a very serious disorder of the pear. It affects the bark around the standard pear-trees in a very similar way to the fire blight, but it seldom penetrates to the inner bark, and very rarely deep enough to destroy the wood. It is, no doubt, a parasitic fungus of less power for mischief than the one which causes fire blight. Scraping away the scaly bark, and rubbing with sulphur and grease prevents its spread.

Leaf blight. All who raise seedling pears know what this is. About the middle of June, if the leaves be examined, a change under the skin is observed, — a paler color. In a few days the spots become brown; they spread until the leaf drops off, when, as every one knows, the wood will not

ripen, and the first white frost kills the young plant. On examining the roots of all pears so suffering, you will find a small thread-like fungus covering the roots. Having some dwarf apples to spare last year, I experimented with a fungus I found on the roots of an apple tree, communicating spawn to healthy stocks. In about three weeks afterward, in every instance, the leaves died, just in the same manner as the leaf blight in the pear. I have never experimented this way with the pear, but have no doubt, from this apple experiment, that the leaf blight in the pear is a process of fungoid development, the headquarters of which are at the root. The fungus develops there, and the spores are taken up through the sap to the leaves, where they go through the processes necessary to reproduction. I have tried watering with water through which sulphur has been stirred, and other matters, but have found nothing successful in arresting the disease.

Knotting, or hardening of the fruit, is a disease not very prevalent; but when it occurs, the fruit, though it swells to an average size, becomes as hard as a stone, and, of course, worthless. It may be a higher state of what, in English works on the disease of the pear, is called gritting. I have never been able to form any satisfactory theory of the disease, nor know of any remedy.

Of *cracking* there are two very distinct forms. In one case, there are but one or two deep clefts, going right in to the core. In our region, *Beurré Giffard* and *Onondaga* are nearly worthless from this disease. I cannot of this, either, form any satisfactory theory of cause or cure.

The other form of cracking is the one well known to exist in the *White Doyenne*, and some other kinds. This I have very clearly traced to a parasitic fungus. About the middle of June, in distinct spots a little paler than the usual green chlorophyl, it can be seen beneath the skin of the leaves and young fruit. On placing these spots under a very powerful microscope, a cell-formed fungus can be distinctly traced, with the young cells in various stages of develop-

ment. They destroy all the plant's cells with which they come in contact; but as the species seems to propagate only by cells, and not by threads and runners, like many, the damage from each nucleus does not extend far. However, after a couple of weeks, all these cells are destroyed, both of the internal tissue of the leaf and of the cuticle, and a small black spot is the result. The whole time occupied in the development of this fungus is not over three weeks. The spores fly off into the atmosphere, and are probably carried down into the earth by rains. No further development seems to take place that season. How these fungoid spores get into the tissue I have been unable to decide. The only way seems to be with the sap through the roots; but trees affected with this disease have been grafted with *Bartlett* and other pears, and no trace of the fungus has been found on them, though four years grafted. If the spores come through the sap, one would suppose it would as well circulate through the sap of a *Bartlett* as through that of a *White Doyenne*. We can only say, that there are delicate organisms in plants which we cannot fathom, except to know their differences by their effects. We know that the Bartlett and White Doyenne have no two things exactly in common. These differences of organization it is which makes one the *Bartlett* and one the *White Doyenne*. Exactly what they are we cannot appreciate, but the delicate fungus may. There may be food for it in the Doyenne, but poison in the sap of the Bartlett. I leave this matter to future researches, noting here, that the fungus, after destroying the cuticle of the pear, of course prevents expansion, while the other parts, continuing to swell, draw away from the indurated part, and thus mechanically crack the pear.

This fungus is often found abundantly on the Seckel pear, but its skin being thicker, the injury does not penetrate deep enough to prevent the due swelling of the parts beneath; hence the Seckel cannot possibly ever crack from this fungus.

It is clear, from this theory of the disease, which I unhes-

itatingly advance as the true one, that no washings, waterings, scrapings, or external applications of any kind, can possibly have any effect. The only course I see is, for the cultivator to carefully watch his orchard, and when any leaves showing the pale blotches of this fungus appear, pick them off and burn them, before they have time to mature and scatter their spores for another season's crop. On very large trees this cannot be done, but in young orchards it might be more easily performed. I would also have all leaves which fall early with this disease burned as they fall. So extensive is this trouble of leaf fungus, that it seems almost puerile to recommend a remedy, so disproportionate to the evil; but I can see nothing better.

The last disease I have to direct your attention to, I call debility, or a general weakening of the system, which either disables a tree from fruiting properly, or affords those fungi which feed on diseased matter a chance to develop themselves, and thus weaken plant-life. A plant may be perfectly healthy in some organs, and weak in others, just as we see in animals; and this is particularly the case with the pear, in which we often find the organs of foliation and growth apparently perfect, while, from a debilitated system of fructification, the trees will be almost barren of fruit. Nothing is more common than to see pear-trees growing freely, vigorously, and, to all appearances, healthy, and, though covered with blossoms, bearing no fruit. This arises from debility — a want of vitality in the floral organs. The juices of a tree pour forth through its system like a mighty river over the surface of the earth. Two branch currents may flow with equal power until some slight circumstance favors one at the expense of the other. It immediately commences to grow proportionately stronger, and in time will take away from the other all that it hath. Even so is it with blossoms. Two of them may start with equal advantages, even to being properly fertilized, but the one which shall succeed in obtaining a slight advantage over the other takes the lead; and if the source of supply is not equal to

sustaining them both, the one with the most vigor robs the other of sustenance and life. This explains why so many pears drop off soon after setting. Sometimes debility is so great, that though the plant produces flowers with apparently perfect stamens, and the trees loaded with flowers, the anthers have been unable to properly perfect pollen, and thus we have barrenness in the midst of floral abundance.

Debility, in most cases, is the result of cultivation; and by cultivation I mean any method of treating a plant which it would not get in a state of nature. Sometimes we intentionally debilitate a pear-tree. We work on the quince stock; we summer-prune, and we root-prune, so to debilitate the wood-producing principle as to induce inflorescence, on the well-known principle that nature always makes an effort to reproduce the plant in proportion to the danger of death. We know we do not get so many fruit as we should in the long run by allowing vigorous nature to take its course; but we sacrifice abundance to gain a little in time. But in our efforts to debilitate just enough to accomplish our aim, we often do too much, until debility becomes, for our purposes, a disease.

When, therefore, we find pears producing flowers and no fruit, and we know no external injury has operated on the blossoms, we may safely assume that the soil is deficient in nutritive elements; that we have done too much summer pruning; or that we have destroyed too many surface roots by a persistent stirring of the surface soil. Pears cannot be grown to great perfection except in rich and generous soils. This is so well known, that people often excuse themselves for growing root crops between fruit-trees by the idea that they are feeding the fruit-trees at the same time. But it is now better understood, that we cannot raise such crops without breaking up the ground, and we cannot break up the ground without breaking up surface roots, the most valuable of all roots; and hence, if we can feed the tree and save the roots at the same time, we gain. The earth will bring forth something. If we do not raise crops, weeds will grow,

which we must cut down; hence, the only thing we can do is, to sow down in grass and surface manure. This grass must not be grown *for the grass*, or it will be as bad as taking off any other crop, so far as exhausting the soil is concerned, but mowed off two or three times a year. By this plan, the grass roots will never run deep or exhaust the soil, and double the pear-trees can be grown on ground where root crops are not cared for; when they grow too thick, as they may be, after twenty years or so, thin them away accordingly.

No one can have any doubt as to the comparative freedom from debilitation of trees grown for years in grass over those grown in continually stirred soil, who examine old orchards under both conditions. Old pears in my grounds eight and nine feet in circumference always bear, if they have any flower at all; always have healthy foliage; always set most of their blossoms, and drop only those which get punctured by insects, enough, however, being always left to produce plentifully; while anywhere in soils with regularly stirred surfaces you find innumerable flowers with few fruit, and of those which do set, innumerable are found afterwards covering the ground, which have fallen off from no cause but sheer inability in the weakened vital principle to maintain them.

Leaf blight and innumerable diseases follow excessively weakened vitality; and I am well assured, that though fire blight, cracking, and all the other diseases I have referred to are the means of destruction to many thousands of bushels of pears annually, debility destroys its ten thousand.

There may be other diseases in other parts of the United States besides these I have referred to, but these are all that I have observed. I give my ideas without feeling that they are absolutely correct, but they may serve to stimulate thought and inquiry, and thus realize, in time, by others what I may fail to accomplish myself now.

Mr. Barry moved, that the thanks of the Society be tendered Mr. Meehan for his interesting and instructive paper.

and that a copy of it be requested for publication in the Transactions.

The motion was unanimously adopted, when the subject was taken up for

DISCUSSION.

Dr. Trimble, of New Jersey. — I hope some gentleman from Western New York will give us some information concerning fire blight in pears. It is affecting our orchards in New Jersey, and we do not know what to do with it. I should like to hear from men of experience concerning it.

Dr. Claggett, of Missouri. — I think the disease takes forms not often noticed. In May, I found a disease in the bark near where the branches started from the stem — and on the healthiest branches also — on trees in the thriftiest condition. Cutting the bark, I find it discolored in spots, and streaks radiating from them, as if the disease originated at these centres. Cutting off the outer bark, I saved the limb and the tree. If left uncut, the upper part of the branch is still alive, while the affected portion seemed dead and dry. If the bark of the affected part is shaved off in time, the entire tree will live. The cutting off of the branches has no effect upon the safety of the tree.

I attribute this form of disease to insects. A friend of mine, who lives among his trees, has paid great attention to this subject, and believes he has found a night-moth, which does this work in the night; one that operates both on dwarf and standard trees. I have had dwarf trees killed. They die at the roots. I attribute it to the want of affinity between the pear and the quince. Some varieties do not unite with the quince at all. They do not return as much to the root as the roots send to the top. There is not material enough furnished to create new roots in consequence of this want of affinity.

Barry, of New York. — In response to a call from the President, said: I confess I have nothing to say except what

is pure speculation; and I have got tired of speculation and of hearing it on this subject. I desire to ask Mr. Meehan if he has discovered fungus on the affected pear-trees.

MEEHAN, of Pa. — I have. Take a part of the tree where affected, and put it under a microscope of moderate power, and you will find the disease spreading in threads of white fungi.

BARRY. — The true remedy is to cut away the parts affected. I do not believe it to be caused by an insect.

HUSMANN, of Missouri. — When I first commenced cultivating the pear, I cultivated highly and manured highly. In a few years, a great deal of blight appeared. A late growth of wood was induced. Late warm, wet falls resulted in immature wood; and, the next season, blight appeared. I began to think I had overdone the thing, and reversed the mode of treatment; and the blight has completely disappeared. I cultivate early in the season, and never cultivate late in the fall. My orchards are now completely free of blight. Others within my acquaintance have a similar experience.

DR. HULL, of Illinois. — I have had some experience with pear-blight. I have travelled over Mr. Meehan's road. I have traced the difficulty, and am convinced that fungus is the principal or sole cause of pear-blight. I have inoculated trees with it when the sap was in active circulation, and it has spread badly; when the sap is at rest, it did not spread so much. Following these hints, I concluded that what would retard the late growth of the tree and develop the terminal buds early, might prevent the development of a condition of the tree favorable to fungi growth. I therefore adopted root-pruning.

(In answer to a question as to mode.) In March, I open a trench eighteen inches from the trunk of the tree, and cut off all roots to the depth of three feet. The second year after, I trench again, enlarging the diameter of the trench, and so continue to root-prune as a part of my system of pear-culture. My orchard is free from blight and from all

other diseases of the pear. I commence to root-prune when trees reach the bearing size. I am exceedingly obliged to Mr. Meehan for his excellent and instructive paper. Our State Horticultural Society is at work on this subject, and prosecuting its investigations with the microscope.

F. R. Elliott, of Ohio. — Has root-pruning been done on both pear and quince roots?

Dr. Hull. — On both. Last year I found a Bartlett tree dying. There were no indications of blight. I suspected it had been overpruned and overcropped. I this year purposely subjected a Bartlett tree to a severe pruning and overcropping, and it actually exhausted the vitality of the tree. I can kill a tree every time in this way, though a root-pruned tree will carry a heavier load than any other. At Alton, we have found fungi on the affected trees, and figured them and presented them to our local Society.

Meehan. — Are there not other diseases of the pear than those commonly enumerated? I have seen other diseases. I have here a specimen of leaf blight (exhibited some pears and some pear leaves with fungi — the leaves from Dr. Hall's orchard) different from any found in the East. I should like to know if it is well known here.

The President thought this appearance peculiar to this region.

Barry. — (Examining the specimen.) This is the common leaf blight of the country, but a bad case of it. It is pretty well developed.

Meehan. — The leaf-blight in our region is propagated by spores. This is a thread-form fungus. We have not this kind; we have the other.

Mr. Bronson spoke of a disease in which the tree retained its color, though the bark shrivelled; but the roots became black, and the tree died as if from want of water.

Stevens, of Missouri. — I had a tree on which I noticed the bark was withering, also the leaves. I hilled the tree up two and a half feet with earth. It was a dwarf tree, and it saved its life.

ELLIOTT. — I have had this blight in my pear orchard. It has appeared after light showers succeeding a drouth. Dr. Kirtland has recommended copperas-water as a preventive of pear-blight. I believe it will arrest it, if used at the first stage of blight. Has any gentleman present tried it?

MEEHAN. — Prof. Kirtland has abandoned it as useless.

STEVENS. — Has any one noticed the curculio attacking the pear? I have lost a great deal of fruit from some insect that stings it. My fruit does not get half its size before it drops.

ELLIOTT. — I do not believe that all varieties of pears will do well on the same variety of soil. The Seckel and Stevens' Genesee do well on light soil; but Stevens' Genesee fails on heavy soils.

PRESIDENT. — On my clay soil, Stevens' Genesee cracks.

DOUGLAS, of Illinois. — On sand and gravel soils, with me, the White Doyenné and Virgalieu crack, while other varieties do not. On heavy soils, the habit of these varieties is reversed.

Adjourned.

SECOND DAY.

MORNING SESSION.

The Society met at 10 o'clock A.M.; President Wilder in the chair.

Resolutions being in order, Mr. BARRY offered the following: —

Resolved, That, whilst regretting the absence from this meeting of Mr. James Vick, of Rochester, N.Y., we hereby tender to him the thanks of this Society for his faithful and efficient services as Secretary and Reporter of our proceedings during the past nine years; all of which has been performed gratuitously.

Resolved, That the thanks of this Society be and are hereby tendered to Thos. P. James, Esq., of Philadelphia, Pa., who has so ably and efficiently served as its Treasurer, without fee or reward, from its formation to the present time.

The resolutions were adopted unanimously, and the Secretary instructed to forward copies of the same to Messrs. Vick and James.

Mr. Barry suggests the importance of the adoption, by the Society, of pomological rules regulating the introduction of new fruits to the pomological world, and moved the appointment of a committee to prepare such rules.

President. — Many years ago, at a meeting of pomologists, such rules were adopted; but this Society has taken no such action, I find, although I had supposed such rules existed. It is important such a committee should be appointed.

Mr. Barry's motion was adopted.

The President appointed the following gentlemen members of that Committee: — Patrick Barry, Rochester, N.Y., Chairman; J. A. Warder, Ohio; Chas. Downing, N.Y.; Thos. Meehan, Pa.; Geo. Thurber, N.Y.

IMPORTANCE OF SHELTER.

The following preamble and resolutions were presented by T. T. Lyon, of Michigan, who moved to refer them to the Business Committee, to be brought up at such time as the Committee deemed best: —

The subject of shelter to gardens, orchards, and farms, is believed to be one of the most important that presents itself to the consideration of those interested either in horticulture or agriculture. And, while it is one in which efficient results can only be reached through concerted action by whole communities and even entire States, on few subjects of such moment are we believed to have so little general information.

As a consequence, entire regions of country of large extent are being recklessly denuded of forests; while, with the least possible regard for this subject, the timber preserves being retained in such form and position as to offer, in most cases, the least possible resistance to prevailing winds.

This is done in ignorance of the fact that, to thus open up a country, is at the same time to diminish the amount of its rain-fall, and to

hasten the dissipation of heat and moisture by evaporation, thus increasing its liability to both frost and drought; as a necessary result of which, certain sections of the country, among which may be reckoned that in which I reside, can no longer grow the peach with certainty, while even the apple is becoming less hardy than formerly.

In consideration of the nature of this subject and of the importance of concerted action, I propose for consideration the following: —

Resolved, That we recommend a general movement by kindred associations, whether horticultural or agricultural, for the dissemination of information on this subject.

Resolved, That, inasmuch as many men receive knowledge more readily when communicated through the pocket, we invoke the aid of Legislation in the enactment of such Highway Laws as shall encourage the planting of roadside trees and secure their preservation when planted; and also in the exemption from taxation of belts of timber, whether natural or artificial, when grown along the west or north sides of buildings, gardens, orchards, or farms, of sufficient breadth and length to suffice as wind-breaks.

Resolved, That a committee of this body be appointed to prepare an address upon this subject, for general circulation, and also to secure, as far as possible, concerted action on the part of kindred associations.

They were so referred.

Charles Downing, of New York, presented the Report of of the Committee on Native Fruits.

BARRY. — I move to print it without reading.

It was so ordered.*

BARRY. — In behalf of the Committee on the Revision of Catalogue, I will state that, at the close of the meeting of the Society, in 1864, our own proceedings, those of local Societies, and information derived from other sources, were taken in hand, and a revision of the list made in accordance with these various reports. Some of the State Horticultural Societies have sent corrected lists again, which will be used in the revision and perfection of this Society's list, after this meeting has closed.

The following letter was received from the Tennessee Horticultural Society, and read: —

* This will be found with other Reports. — SECRETARY.

TENNESSEE HORTICULTURAL SOCIETY
NASHVILLE, SEPT. 17, 1867.

To the Secretary of the National Pomological Society, St. Louis: —

SIR: — This Society has this day organized, and made an effort to have itself represented at your meeting. The time necessary was too short; and we will have to defer for another year making ourselves known among you.

Under the auspices of this Society, it is believed that this section of country will develop itself as one of the best fruit-growing sections in the Southwest; and the early seasons and facilities to the various markets must attract growers to its importance.

Regretting the inability of the Society to be represented in your meeting, and with warm wishes for its success,

With respect,

Yours truly,

FRED. H. FRENCH, *Cor. Sec'y.*

M. L. DUNLAP, ON PACKING AND MARKETING FRUIT.

PRESIDENT. — The Society will now be addressed by M. L. Dunlap, of Champaign, Illinois, on the subject of "Packing and Marketing Fruit."

DUNLAP. — It is not my purpose to occupy much of your time in debating this topic. I aim only to call your attention to its importance, and elicit such practical suggestions as may benefit all of us. We have now a new condition of things presented to us. Once fruit came to our doors fresh from suburban gardens, brought hither in wagons. Now it comes long distances over railways. We can now extend the season of fruit. By aid of railways we get early fruit weeks before our own suburban grown fruit is ready for the market. In Illinois — and I mention that State because it is an illustration with which I am best acquainted — we have a line of fruit-producing country of three hundred and eighty miles of latitude. At Villa Ridge, near Cairo, strawberries are shipped to Chicago market the fifth day of May.

At that time, in the gardens of Chicago, strawberries are not yet in bloom. So that for Chicago we have an early fruit without change of varieties. Railways are a substitute for early varieties, and bring the fruits of the Southern sunshine to our doors almost before the frost has left the soil in our gardens. From Chicago these fruits are sent by rail to Lake Superior and the Rocky Mountains. The season progresses North at the rate of about twelve miles per day. The strawberry season at Villa Ridge continues about two weeks. But the season of strawberries in Chicago is extended nearly or quite two months and a half, from the 5th of May to the 15th of July.

Now how to get this fruit to market is one of the most important questions for the fruit-grower. For we must not only have facilities for putting them on the market promptly, but in the best possible condition.

We commence early in July with peaches, and have them until winter closes upon us. We have quadrupled the length of the season of any given fruit in Chicago and other markets. Each locality has its exclusive season in the Northern markets; and yet the season of each fruit is greatly extended, and by this means. This has resulted in stimulating fruit-growing to an enormous extent.

But there are abuses growing out of this desire on the part of the grower to get fruit early on the market, that need to be corrected. Peaches, half grown and insipid, are shipped from Southern Illinois, and appear on the market in a condition worse than worthless, — worse, because the man who buys such fruit, dreaming of the luscious joys which lie within the bloom of the peach, is sure to be disappointed; and he purchases no more. In order to make fruit-growing profitable, the fruit must be put on the market in the best possible condition. In the St. Joseph region of Michigan, fruit is picked for the Chicago market at the first stage of ripening, and gets to the consumer in the best condition. But it deteriorates when intended for railroad transit to the markets north-west of Chicago. We want a change

in the present accommodations for carrying fruit on railways, or a change in packages we use for shipping.

Fruit must have air. We need well-ventilated cars. If we do not have them, fruit in transit over these long lines of railway will sweat, swelter, and decay. The cars should not only be ventilated but mounted on springs, and light cars carrying six tons, in order to insure rapid transit; and then we want a reduction in our freight-tariffs, which are too high. We want well-ventilated refrigerator-cars not only on the lines of railway penetrating the fruit regions, but on the lines of distributing roads. The miners of Lake Superior and of Colorado, and the dwellers on the great plains to the west of us, must have our fruits, and they must have it in good condition. And we must ask and demand, if necessary, of the railways, the accommodations for this traffic which we find we need.

About packages: There must be a change in our mode of shipping fruit. Fruit in boxes is regarded as something that can be pitched fifteen feet and rebound, and be better than when started. Men who handle freight will pitch boxes about. They cannot pitch baskets; they do not. We must educate our transit agents to handle delicate fruit as it ought to be handled.

In Michigan an excellent fruit-basket is made. It holds one third of a bushel; is composed of nine staves, four hoops, and a head. The cost of this material, prepared to set up, packed for shipment, is seven cents per basket. The basket made with the cover costs thirteen cents. It will stand the wear and tear of railroad travel. It is the best thing in the shape of a basket I have seen.

Objection is made to shipping fruit in baskets; that delicate fruits are abraded and bruised by the jar and friction of travel. I have found apples in market, shipped in barrels, that were spoiled because they were not properly packed, — pressed into the barrel before heading, so that there could be no shaking. Packed in boxes, the rule is, I believe, to press the fruit one half inch. It is not enough. Fruit

must be subjected to greater pressure if it carries well. The fruit should be rounded in these baskets, and pressed into them by the aid of a lever or screw and follower, on the cover, and wired down. By this means, I am satisfied, fruit can be carried as safely in baskets as in boxes.

Another thing in favor of the use of baskets is the value of the packages after the fruit is used from them. Boxes containing one third of a bushel cost eight to ten cents each. Reaching the consumer they are of no value for any purpose except to burn as kindling wood. They cannot be returned to the producer. But these baskets are always useful to the purchaser, if not returned to the producer; and they can be closely packed, because they are so shaped that they set into each other; so that whether sent back to the consumer or not, the real value of this form of package, in addition to that derived from it in consequence of its carrying its fruit better, is greater than that of any other form.

In the Chicago market people are disgusted with pears. They believe they were made for something beside digestion. They cannot eat nor sell them. Why? Because they are not put on the market in the right condition. They are not always gathered when they should be; when they are, and immediately sent to market, they are not in condition to put on the market. Such fruit must be ripened in the hands of commission-men. This has not been done the past season; and the reputation of the pear, as an edible fruit, has suffered greatly in that market in consequence.

Dr. Hull, Alton, Ill. — We commenced shipping fruit from Alton many years ago, when it was important so to pick and pack fruit that it might reach distant markets in good condition, after considerable delay. Then we had only fruit-baskets holding a half bushel or less. We made a contract with Chicago dealers to deliver fruit at Alton at a stipulated price. It then took from four to six days for fruit to reach Chicago from our place. I then objected to this contract, because I desired to pick and sell fruit in the proper condition. But I find that fruit picked when ripe

will carry just as well, if properly packed, as that picked before it is ripe. I have been shipping peaches and other fruits to a half dozen different States. I pick it when mature, pack it so that there will be no friction, and it carries six days safely. The basket is the only form of package in which fruit should be shipped. But we want cars on our railways better adapted to the transportation of fruit. Cars need to be remodelled to enable us to ship in baskets. It is impossible to ship peaches of uniform character in boxes; and it is most important, as a matter of profit, that the fruit in a package should be uniform. In baskets there is no difficulty in shipping assorted fruit. In packing in baskets or boxes, it is important to secure a degree of pressure that will prevent the fruit loosening, and bruising or abrading from friction. When I pack peaches to go long distances, I pack in oak leaves in the bottom of the basket and between the layers; and I have no difficulty in putting fruit into Eastern markets in good condition, picked when it is ripe.

Dr. Claggett, of St. Louis. — I wish I could impress upon fruit-growers the importance and profit of assorting fruit. Fruit will not only bring better prices if assorted, but depreciation of prices will be prevented. Too few shippers assort their fruit. Such as do, get from one third to one half more for it than those who do not do so. Full one third of the fruit found in packages had better have been given to the pigs. The market is overrun with packages of inferior fruit. We who are dealers have to assort it. If one third of the fruit sent to this market were left at home, the other two thirds would bring more money than the whole does now. It is every man's interest to leave imperfect fruit at home. If he does not, the buyer has to throw fully one third of it away. If a dealer knows a shipper has a reputation for assorting his fruit, he can recommend his packages confidently without examination; but, so far as nine tenths of the packages received from shippers are concerned, dealers know nothing about them that will

warrant them in asserting the excellence of the fruit to a customer, until it has been examined. I wish every shipper knew the value to him of a good reputation — of a reputation that will sell fruit-packages bearing his brand at the highest market price, without examination. Every fruit-grower should aim to get such a reputation.

Strawberries have been shipped in ice-boxes, and the experiment failed because of dampness. But the refrigerator-cars are to be well ventilated, ice being used to cool the air, but carried in a separate and water-tight compartment. And in this connection, I desire to say a word about the waste fruit in our orchards. This wasted fruit amounts to hundreds of thousands of dollars in Illinois alone. We use in towns, cities, and too often in the country, vile vinegar, when we might have the best by utilizing the waste of our orchards. The fruit stung by the coddling moth in the spring, should be picked from the ground as soon as it falls, and the cider expressed from it for vinegar. From my small orchard, I will make two thousand gallons of vinegar this year, from unmarketable fruit.

J. D. G. Nelson, of Fort Wayne, Ind. — I have had considerable experience in making vinegar from fallen fruit, and I find the gathering of it as fast as it falls diminishes the ravages of this moth annually. There is plenty of juice in this fallen fruit, contrary to the belief of many. I am manufacturing all of my fruit into vinegar; the vinegar sells at good paying prices. I have a man who does nothing but pick up prematurely fallen fruit; and he has help, if necessary, to gather it daily.

Dr. Trimble, of New Jersey. — In strawberry time, I saw strawberries in the New-York market, in most excellent condition, shipped from Pittsburgh. They were in perfect order, and sold at fifty cents per basket. Don't know how much each basket contained.

Thurbur, of New York. — They each contained ten berries.

Dr. Trimble. — Well, Mr. Knox is here, and I should

like to have him tell us something concerning his mode of packing and experience in shipping fruit

J. KNOX, of Pittsburgh, Pa. — In my strawberry culture for distant markets, I am careful to select varieties that ship well. There is a great difference with varieties in this respect. I gather the fruit *when ripe*, and only perfect berries with whorls on, and put them in pint and quart boxes or baskets. The packages which contained ten berries each, to which Prof. Thurbur has alluded, were pint boxes or baskets, and the fruit brought sixty cents per pint. Of course, they carried well four hundred miles, to sell at that price. We pack in well-ventilated boxes or crates. We allow the fruit to mature ripe enough for our own table before it is gathered for market. It is all wrong to suppose that green fruit will carry better or bring more in market than ripe. The Jucunda carries best. Have sent this strawberry to New York, gathering it Monday, reaching New York Tuesday, and kept it until the following Friday and Saturday, and sold it at higher prices than other varieties brought, grown in the immediate vicinity of New York. Next to Jucunda, the Triomphe de Gand and Fillmore, ship best. Of course, we handle fruit carefully. In New York and Philadelphia, our own agent receives the fruit on its arrival.

H. E. HOOKER, Rochester, N.Y. — These remarks show the profit of good culture. All our crops should be so cultivated and grown as to prevent all this over-bearing and over-productiveness. We are disgraced by our slip-shod modes of production; and the profit of doing well what we do is inforced by the testimony and practice of Mr. Knox.

KNOX. — My experience is, that if good varieties of fruit are well grown, carefully handled, and properly brought before the people, they will buy it at prices that will pay the producer a profit above the cost of production and handling.

BRYANT, Princeton, Ill. — Mr. Knox has spoken of the Triomphe de Gand as carrying well. It does not carry well with us.

HOAG, Lockport, N.Y. — We send strawberries five hundred miles to market. Have sent Jucunda to New York, and it arrived in good condition, and sold for more money per quart than the Wilson's Albany, grown near the city.

DISCUSSION ON RASPBERRIES.

Robert Buist, of Philadelphia, in the chair.

DUNLAP. — I desire to offer, in this connection, the following resolution:

Resolved, That, for all practical purposes, all of the so-called everbearing raspberries, as at present known, are of little value.

PHŒNIX, Bloomington, Ill. — This resolution is wrong in spirit and practice. It is understood to be desirable to prolong the season of each fruit. Because we can not get these berries to ship to market, it does not follow that that we do not want them for family use.

DUNLAP. — But how many gentlemen get fruit enough off these so-called late-bearing varieties to furnish their own tables? Beside, each fruit has its season.

DUBOIS, Fishkill Landing, N.Y. — A few years ago, I planted the Catawissa, and it has fruited abundantly. It is very productive with us.

HOOKER. — I do not believe we should be called upon to pass any such resolution. We may each judge for ourselves as to the value of these fruits for our own use.

BATEHAM, Painesville, O. — So far as the resolution may refer to the Catawissa, I could go for it; but so far as it refers to the Ohio Everbearing, I could not go for it, for the latter prolongs the season of the Black Cap materially. I regard it the best of all the late-bearing varieties.

MEEHAN, Germantown, Pa. — The Catawissa is popular as a fruit to cultivate for family use.

KNOX. — Proper information ought to be given the people concerning varieties. These late-bearing varieties are unreliable as bearers, and the fruit is of little value. I speak of the Catawissa and Ohio Everbearing. They are of no

value for market. If you can get good peaches or grapes, you want no such fruit.

PARRY, Cinnaminson, N.J. — I have cultivated raspberries a good number of years, and acted upon the principle that the fruit best received in market was the best fruit to cultivate. I have cultivated the Catawissa, Bayley's Perpetual, and Ohio Everbearing; and, tested by the above principle, have abandoned their culture for market; and they are really of so little value for home use as render it unwarrantable to give them ground to grow upon.

DUNLAP. — We want to prevent people being duped with these so-called everbearing raspberries. I have travelled considerably in my time, and have sat at the tables of a good many prominent agriculturists and horticulturists; but I have never yet found these autumn berries on the tables of any of these gentlemen. I don't want to prevent gentlemen who can furnishing us with such fruit; but I do want to prevent the expectations of the public being raised too high by them.

KAUFFMAN, Des Moines, Iowa. — I fear the gentleman who has just taken his seat has never visited Iowa. He will find fruit from these late-bearing varieties on our tables. We have them in fair quantities for family use, and do not propose to do without them.

DUNLAP. — My resolution has served its purpose. With the consent of the second to it, I withdraw it.

The resolution was withdrawn.

CLARKE RASPBERRY.

CAMPBELL, Delaware, O. — I have had this variety two years. It is a strong-growing, healthy, vigorous variety. It is productive. I regard it the best of the Antwerp family. Last winter was a severe one. It stood exposed in three different localities. It went through the winter uninjured.

BARRY. — I have had it four years. It is *entirely* satisfactory. I regard it a valuable addition to the list. It is of

fine size, beautiful color, and excellent quality. It is hardy both in winter and summer. It will supply a want for a highly delicious table variety that is hardy.

BATEHAM. — It is said to resemble the Belle de Fontenay. I ask for information.

CHAIRMAN. — It has no resemblance to Belle de Fontenay.

CAMPBELL. — It is full as firm a berry as the Hudson River Antwerp, and I think it will carry well any reasonable distance.

KNOX. — It is hardy, a robust grower, produces a good fruit, and a moderately firm one, though not as firm as the Hudson River Antwerp.

H. B. LUM, Sandusky, O. — Mr. Bateham is, I think, mistaken in supposing it to resemble Belle de Fontenay. It was compared with the Kirtland, which it is said to resemble.

TROWBRIDGE, of Conn. — It is hardy with us. Flavor sprightly, and for table use is a better berry than any I know. It is readily propagated.

E. A. BRONSON, Geneva, N.Y. — I saw this fruit growing on Mr. Clark's own grounds. I can corroborate all that has been said of it. It is almost, if not quite, as firm as the Hudson River Antwerp.

E. WILLIAMS, of N. J. — My Clarkes killed last winter to the snow line. I attribute it to late growth and unripe wood; yet it fruited promisingly. Another season is wanted to determine its merits.

PHILADELPHIA.

PHŒNIX. — The Philadelphia is productive, tolerably firm, very hardy, and I wish it had a better flavor. I desire to hear from Western cultivators concerning their experience with it. It is an enormous bearer; it seems to me to be ahead of all others in that respect.

DR. SYLVESTER, Lyons, N.Y. — I have the Philadelphia. Last winter was a very severe one with us, and killed many

of our fruits; but the Philadelphia proved hardy, and fruited abundantly this past season.

Bateham. — I once said we wanted a firstrate, hardy raspberry. I was recommended to test the Philadelphia. I have tried it, and must still remark, that we have not got a firstrate, hardy raspberry. We have not got it, unless the Clarke is one.

E. Williams, of New Jersey. — I have had experience with it four years in New Jersey. It (the Philadelphia) is hardy enough for practical purposes; is very productive, but of inferior quality. We *do* want a *firstrate*, hardy berry.

Barry. — Do gentlemen lay raspberries down in winter? I do not think we need expect to get raspberries that will be hardy without laying down. We turn over the canes and lay a spadeful of earth on the top of the so-called tender sorts, and they prove hardy with such treatment.

Campbell. — The Clarke raspberry is hardy uncovered.

President. — We find it necessary to lay our fruit canes down. It is not safe with us otherwise. Brinckle's Orange has been known to stand the winter well, but it was an exception.

Charles Downing. — The variety grown for market on the Hudson River is the one known as Hudson River Antwerp, and is always laid down and covered during winter. This season the crop has averaged five hundred dollars per acre, exclusive of picking and transportation.

Dr. Sylvester. — My Philadelphia canes were not covered, and they produced well.

President. — Tried the Clarke Raspberry leaving one half of his plantation uncovered. They went through the season safely, but were not so productive as those laid down.

Stevens, of Missouri. — Are the Clarke raspberries cultivated or known in the West?

Hoag, of New York. — A Canadian gentleman has a seedling that stands exposed, and is hardy, productive. It is a very vigorous grower. It is known as Arnold's seedling. He has eight numbers. One variety is much like Brinckle's Orange.

Dr. Trimble. — I want to say a good word for the Doolittle.

Wier. — In the West we know nothing but the Doolittle. We have discarded all others. We have practised covering tender varieties, but failed to succeed.

Bronson. — Mr. Doolittle is bringing out another raspberry that is a week later than the Doolittle Black Cap, and fully equal to it. He has named it the Seneca. He hopes to lengthen the season with it. It is a larger fruit than the Doolittle.

Dunlap. — The Miami is of the same season as the Seneca, and very like it.

Barry. — The Doolittle is our very best early raspberry. Miami is a week later than the Doolittle. It comes in competition in market with the Philadelphia. I have twenty acres of the Doolittle growing, and have discarded all other black varieties. It does equally well on light sand, loamy, or clay soils. (In answer to a question.) — We make trenches, fill them with muck, leave it exposed to winter frosts, and plant four by eight feet apart, and grow great crops. We apply animal manures. We do not stake. Cut the canes back, according to their strength, from three to three and one half feet high. We gain by shortening. We shorten in winter before the buds start.

Isaac H. Babcock, Lockport, N.Y. — The Black Cap is most in cultivation. We have one large grower of the Franconia, which does finely. It has been unprotected for six winters, and is hardy so far. The Philadelphia, by the side of it here, is nowhere.

BLACKBERRIES.

Kittatinny being named, several called for Mr. Williams, of N.J.

Williams said it was well known he disseminated the Kittatinny, but he came not here for the purpose of extolling its merits. He wished to hear from Western men, how it had succeeded away from home.

Wier. — Men who read the papers know how this variety does in the West. I think more of it than of any new fruit I have ever tried. It stood the winter well with me.

Dr. Edwards, of St. Louis. — It is earlier than the Lawton; nearly a week earlier. It has proven about as productive as the Lawton with me, and decidedly a better berry. It stood the winter uninjured. I esteem it very highly. Its flavor is the best.

Kauffman. — I want to know how it compares with the Lawton in the East in respect to productiveness.

Dr. Trimble. — I have grown it five years with the Lawton, and give it the preference. Some seasons it is more decidedly superior to the Lawton than others. It is hardier. The Kittatinny is better in quality always. You know when it is ripe. You can pick it, and have every berry ripe. You cannot do so with the Lawton. By summer-pruning the Kittatinny, I can make a perfect tree of it — as beautiful as a pear-tree. It suckers largely. It will discolor some in transporting it, but not so much as the Lawton.

Dr. Sylvester. — I have fruited both the Lawton and Kittatinny, the latter but one year. The K. is hardier, according to my experience, withstanding more cold than the peach or cherry. Its canes stood up uncovered, and stood well through a winter of great cold. The fruit of each is distinct, and will occupy two different positions with pomologists. The Lawton is too acid for the table; but can it, and no man can be too sick to relish it. The Kittatinny is of good flavor for the table. It will please most people. It will grow enough to suit any one; it is a strong, vigorous grower. We have berries on it for four weeks.

Wier. — It had two sets of blossoms with me the past season, the second blossoms being more abundant than the first.

Dr. Sylvester. — I had the Kittatinny and Wilson's Early on the same ground, and found the former to be the earliest.

Stevens. — Does the Kittatinny ripen its fruit all at once or not?

WIER. — With me its fruit ripened all at once.

WILLIAMS. — It ripens rapidly, but bears two crops. [The reporter could not hear the balance of Mr. W.'s speech.]

TROWBRIDGE. — It is most successfully cultivated by New Haven (Conn.) cultivators. We keep the ground free from weeds chiefly by mulching, and it produces wonderfully.

DR. HUMPHREY, of Iowa. — If pruned while growing, does it not make a stronger growth?

STEVENS, of Missouri. — I have tried pruning it during the growing season, and like the practice and its results well.

NEWMAN, of ——. — I find no difference in the time of ripening the Kittatinny and the Dorchester. The berries of the latter are small. The Kittatinny is loaded with fruit. Wilson's Early ripens with the Kittatinny, but it is not as hardy. The Kittatinny is more hardy than the Lawton. I am not prepared to speak positively of the hardiness of the Wilson's Early, since I have had it but one winter.

GOOSEBERRIES.

DR. TRIMBLE, of N.J. — All gooseberries mildew with me except the American varieties.

HOOKER. — I should like to hear about Downing's Seedling. In our grounds it has proved an abundant bearer; has made a healthy growth, and I think it a decided advance upon American varieties.

PRESIDENT. — It is the best American variety.

J. W. MANNING, of Massachusetts. — It is excellent with me.

WIER. — I have had it five years. Last year it bore a part of a crop, and this year a full one. It has proved very satisfactory except because of its lateness for market purposes.

HOOPER, of Pennsylvania. — It is a delicious gooseberry. We call it A No. 1. It droops a little in habit, and

improves as the bushes get age. The young plants do not bear well. Have never seen any mildew on it.

MANNING. — With me it has an upright habit, and bears well.

WILLIAMS. — Have had it three years and like it. None but American varieties are worth growing.

PHŒNIX. — It is a large, greenish-white berry, productive, and of fair quality. It is a more upright grower than Cluster or Houghton. Its habit and appearance in growth is more like the English berry. I have another berry, bearing the same name, which is more sprawling in habit, red, of good flavor, but not so desirable as the real Downing.

CURRANTS.

BATEHAM. — I have learned to appreciate this fruit. Too much of it comes into market half grown and poorly ripened, and consequently poorly flavored. Good grown and flavored currants astonish people accustomed to the little acid fruit sold by the name which comes into market. An objection is made to currants that so much sugar is required. It is a mistake to make the objection. Sugar is an important article of diet, especially when used with fruit. People fail to understand this as they should. More fruit should be used, and more sugar in connection with it. The Versaillaise and White Grape do well when well cultivated; but good culture is necessary.

PRESIDENT. — The Versaillaise is the best large currant we have. It is an abundant bearer, and of good quality.

WEIR. — We must produce better fruit. We can have currants later in the season than we do, by thorough mulching early in the spring. By this means, currants will retain their foliage and their fruit also.

DR. TRIMBLE. — We pick currants too soon; we do not let them get ripe. Take currants in August, and, if ripe, mash them up in a dish and sweeten them, and they are a most delicious fruit for hot weather eating.

WILLIAMS. — Currant-culture is as profitable as the culture of any of the small fruits. The currant is a most healthful fruit, and comes into market when it is most needed. If properly managed, people have no idea of its lusciousness. I get fifteen cents per pound for my crop. They weigh one and a half pounds to the quart. The merits of this fruit had been strangely overlooked. It comes at a season when the system seemed to require the acid peculiar to them. They were healthful and exhilarating. Those who had only been accustomed to our common varieties as commonly grown, had no conception of the beauty of the Cherry, or the quality of the Versaillaise, White Grape, or Imperial Yellow, when well grown. It is *one* of our most profitable fruits.

PRESIDENT. — A neighbor of mine gets currant crops every year, that bring him from eight hundred to one thousand three hundred dollars per acre — all grown under apple-trees in an orchard.

HOOKER. — It may be new to many, that the currant-worm can be destroyed by sprinkling the bushes, when the dew is on, with white powdered hellebore. If gentlemen go without currants a year or two, as I have done, because of their destruction by the currant-worm, they will learn to appreciate this fruit. My experience does not justify the distinction claimed for the Cherry, Versaillaise, and La Fertile. They are not so different that they may not be mistaken for each other.

J. W. MANNING. — The currant-worm was very destructive on some grounds this year. I have found it difficult to distinguish the difference between the varieties named by Mr. Hooker, on my own grounds.

PRESIDENT. — The Cherry currant is most certainly distinct from the Versaillaise and the other varieties. I am quite sure they are distinct.

HUMPHREY. — The currant is a great feeder, and requires a great deal of food. This difference in feeding sometimes causes varieties to lose their identity.

Adjourned.

AFTERNOON SESSION.

The Society met at 2½ o'clock.

President WILDER in the chair.

DR. MORSE, of St. Louis, announced the fruit exhibition in the Upper Hall to embrace, — peaches, 212 plates; grapes, 680 plates; apples, 802 plates; pears, 745 plates; plums, 6 plates: total, 2,445 plates.

In compliance with the Constitution, the President announced the regular Standing Committees. See page 9.

DR. C. W. SPALDING invited the Society to taste the wines exhibited by the Mississippi Valley Wine-Growers' Association.

STRAWBERRIES.

HEAVER, of Cincinnati, O. — Have gentlemen proved the Buffalo and McAvoy to be identical, as it is asserted they are?

HOOKER. — No, sir. They are distinct. The Buffalo is the better berry; but neither of them is worthy extended planting.

HEAVER. — Russell's Prolific and the McAvoy are distinct. There is a great dissimilarity between them.

HOOKER. — I visited Mr. Russell's place and saw his seedling growing there. I told him that it resembled McAvoy's Superior. He replied that it grew from seed of the McAvoy. There is considerable confusion concerning the McAvoy, as it is known in different localities. Russell's Prolific is a dark scarlet.

HEAVER. — With us it is a light-colored fruit. I am now at a loss to know whether I know Russell's Prolific or not. Cincinnati fruit-growers contend that, in point of flavor, no berry equals the McAvoy. Along the lake shore, years ago, it was one of the most prolific strawberries. We are anxious to know if it is identical with the Buffalo.

KNOX. — This whole matter was discussed at Rochester,

at the last meeting of the Society. It was decided then that the Buffalo and McAvoy were identical. The plant of the Russell and McAvoy are similar, but the fruit of each is distinct. The McAvoy is a good fruit, but not reliable for a crop.

QUINNETTE, of Missouri. — I have grown the McAvoy fifteen years. It does not stand in this climate well. I think there is no doubt that the Buffalo and McAvoy's Superior are the same.

MASON, of Missouri. — This question of the identity of these fruits came up before our county society, and a committee was appointed to examine the question. A thorough investigation was instituted. It was the unanimous opinion, there was no difference.

PRESIDENT. — It is hardly worth while to discuss the question further; for it is of little importance whether they are identical or not.

AGRICULTURIST.

HOOKER. — I have been disappointed with this fruit. I have not found it of a particle of value for cultivation for home use or market. It produces some fine, large berries of middling quality, and a great number of inferior berries.

DR. HUMPHREY. — The Agriculturists planted and treated with others did not come up strong. They bore full crop of fruit, two thirds of which was large and sweet.

BAUGH, of St. Louis. — It is the strongest growing strawberry I have.

WILLIAMS, of N.J. — It exceeds everything I grow in point of size, but there is not vigor enough about the plant to mature all the fruit that sets.

TAFT, of Missouri. — It does not stand as high as other varieties in our locality. The fruit is not as fine as the McAvoy, nor is it as good a bearer as the Wilson. Its flowers are imperfect.

KNOX. — It grows well with me, and bears tolerably good crops. Some berries are quite large. It is second as to quality.

JORDAN, of St. Louis. — Gentlemen do not give their respective modes of culture, nor the character of their soils. I have seen the Agriculturist on clay soils in single hills not doing well; but on sand in single hills it does well. With us it runs very much. We want to know the modes of culture adopted by men who have had experience with it.

DR. LONG, of Alton, Ill. — It, with us, ranks with Russel's Prolific for market; it is rather soft. It is a profitable berry. Its quality is second best.

HOAG. — I have a neighbor who has tested it a long time on gravel and clay; with him it has proved an entire failure.

DR. TRIMBLE. — Seth Boyden, who cultivates his fruit in a scientific way, says the Agriculturist did not succeed first-rate with him. He regards the Green Prolific as much better.

DR. EDWARDS. — I have the Agriculturist and the Green Prolific, which I am testing. The last two years I have had no strawberry that would compare with the Agriculturist in productiveness except the Green Prolific, and none in quality. The Green Prolific produces as much again fruit as the Wilson's Albany, planted along side of it. Friends who were astonished at my statements have seen the evidence of these truths and were more astonished. The Green Prolific is a little too soft for transportation; the Agriculturist is firmer with us than the Green Prolific. The Agriculturist is among our best and most productive berries. I have had but little experience with the Jucunda. At Mr. Knox's, its productiveness, as I saw it, exceeded anything I had then seen; but the Green Prolific exceeds it. The latter is a later berry, productive, a hardy plant, and continues longer in bearing than any berry I have ever seen. The Triomphe de Gand is, with me, worthless — not worthy of cultivation. The Jucunda promises well here.

E. WILLIAMS, of Mont Clair, N.J. — Green Prolific too soft for market, and too acid on my soil for family use.

Lady Finger unsurpassed for beauty and solidity; quality first rate, but not quite so productive as desired. Fillmore on my grounds not fit to eat. Triomphe de Gand very unproductive and poor in quality. Downer's Prolific is the best *early* variety I have yet tested.

QUINNETTE. — The Agriculturist has not proved valuable with me here.

PARRY. — It succeeds very well in our soil, and ranks one of the best and most profitable of berries. It grows uniformly large, and yields well.

JUCUNDA.

HOOKER. — I have fruited it three years. I am pleased with its appearance, good health, vigor, and fair productiveness. It is a handsome fruit, of middling flavor, second quality. It is a promising strawberry.

HEAVER. — The Jucunda has attracted great notice. It is of fine appearance; but when you taste it, you might as well taste a poor turnip. From the advertisements with which it was heralded to the public, we were led to expect great things of it; but I have been disappointed in it.

MCCULLOCH, of Ohio. — I have fruited it. It is a good berry — first-class; nearly as good as the Wilson. It has not stood the drouth with me as well as the Wilson.

HOAG. — It has done finely with me for five years. I get double the price for its fruit that I do for other varieties, whether people appreciate it or not. It is productive, though not of the first quality. Compared with the Wilson, it has proved more productive with us where it has been tested. It will not only produce more fruit, — the season is longer.

DR. HUMPHREY. — It is not so productive with me.

STEPHENS. — Our neighbors who are growing it are pleased with it.

KNOX. — I have wanted to hear all that could be said against the Jucunda. I have tested it thoroughly. I have practised no deception in relation to it, in putting it before

the public. It is greatly the most valuable strawberry I grow. It is uniformly large, a perfect beauty in form and color, and yields enormously. It is astonishing how it is possible for a single plant to perfect the fruit it bears. The flavor is a matter of taste. Some people like the flavor of Wilson's Albany; others do not. I do not regard Jucunda as first quality. Others regard its quality more highly than I do. I say little about flavor in putting a fruit before the public, because it is a matter of taste. I do not care whether other people believe in it or not. If I had never sent a plant out, I should have made more money out of this strawberry than I have by selling plants. I can make more money off of one acre of Jucundas, than off of five acres of Wilson's Albany. It bears later, and continues to bear late. It is easy to pick, because ten berries will fill a pint basket. I am prepared to sustain, with facts and figures, every statement I have ever made concerning it.

Wier. — I have never seen it outside of Pittsburgh, on any soil, anywhere, where it has done well. I am willing to admit, that Mr. Knox has said nothing concerning it unwarranted by results on his grounds.

Griffith, of Pennsylvania. — In Niagara County, N.Y., I saw the Jucunda growing in the midst of other varieties. I admired it because of its appearance, and very much because of its flavor. I learned afterward, that the crop was sold at about seventy cents per quart, much to my astonishment. Such is the effect of good culture. I am forced to believe, that the difference in the size and value of the fruit is largely due to the difference in culture in different localities.

N. J. Coleman, St. Louis. — I have cultivated the Jucunda. In 1860, I obtained it from Mr. Saul, of Washington. I had cultivated it three or four years, and bestowed upon it the same care as upon other varieties which proved profitable to me; but I did not discover remarkable merits in it that are claimed for it, and concluded that, on my soil and with my system of culture, it was not worth any thing to

me, and plowed it up. While the Wilson's Albany paid well, with the same culture the Jucunda did not pay. I did not cultivate it as Mr. Knox does. It may be, that with nice culture it will do well on my grounds; but labor is not cheap here, and I cannot get the class of help to weed and cultivate that is easily obtained at Pittsburgh, and this makes a great difference with us.

JORDAN. — We cannot introduce any one variety of strawberries that will be found adapted to the whole country. This is the important lesson to be learned from this discussion. Different varieties are adapted to the different localities and modes of culture. A strawberry is not to be condemned by wholesale because it fails in one locality; nor is it to be universally recommended because it succeeds in a given locality, on one kind of soil, with one mode of culture.

DISEASES OF THE GRAPE.

The following paper was read by WILLIAM SAUNDERS, of the Department of Agriculture, Washington, D.C.: —

In a communication which I had the honor of submitting to this Society, at their meeting in 1860, the causes and effects of mildew on grapes were treated somewhat at length. Subsequent observations have only tended to confirm the views expressed at that time. It has, therefore, appeared to me unnecessary to repeat the details already embodied in your proceedings. At the same time, a brief resume of what has been learned may be suggestive and useful for future reference.

There are various forms of mildew to be seen on the leaves of the grape, although, for present distinction, they may be divided into two classes; viz., those that make their appearance on the under surface of the leaf, and those that develop more particularly on the upper surface.

Both classes of mildew are mainly, if not wholly, the

result of atmospheric changes, more particularly those of a hygrometric character.

The most fatal form of grape mildew is that species which attacks the under surface of the foliage, and is known by the name of leaf-blight, sun-scald, and blasted leaf. Its presence is first indicated by a slightly yellowish discoloration on the upper surface of the leaf, which gradually increases until the part affected becomes brown. By turning over the leaf, the fungus will be observed spreading and destroying the vitality of the tissue; the leaves ultimately wither, crumble, and drop off. This form of mildew appears to be produced by continued dampness, more particularly when heavy dews or occasional rains, accompanied by dull or cloudy weather, immediately follow a period of dryness and bright sunshine; it also spreads with greatest rapidity, other circumstances favorable, in positions where evaporation is least active. All varieties of grapes having downy foliage are more subject to this form of mildew than are those with smooth and shining leaves. The second general form of mildew is that seen on the upper surface of the leaves, giving them an appearance similar to having been dusted with fine flour, and which may be brushed off without any apparent marks of injury. Occasionally, this will be observed on the berries in early summer, and may have some connection with the rot. Its effects are those of retarding growth, and the fruit, and even young shoots, in extreme cases, crack open, as is seen in the cracking of the fruit of some varieties of the pear. The debilitating effects of dry air and dry soil seem to render vegetation liable to its attacks and favorable to its extension. This form of mildew is less frequent and not so injurious on the native species of grape as that previously mentioned; and, when treating on preventives, the first-described form will be more particularly kept in view. The rot in the berry is, perhaps, the most fatal disease in the grape, and one whose origin is yet obscure. It is undoubtedly a fungoid growth, from which fact we may deduce its origin to a disorgani-

zation of the plant, a weakened vitality, proceeding from one or various causes, either immediate or remote from its appearance.

I purposely refrain from enumerating any of the many theories that have been promulgated regarding this disease, further than to mention that it has been noted that, where it does exist, it is most persistent and fatal on plants growing in soils rich in organic matter, showing that a condition favorable to luxuriant growth of plant is favorable to the extension of this disease.

It is also well known that, in the case of foreign grapes grown in glass structures, where all the circumstances of culture are in a great degree artificial, the rot is prevented in varieties subject to that disease, by withholding water during the period of swelling and ripening of the fruit.

It is probable that we have not yet sufficiently systematized observations on this disease to enable us to arrive at an intelligent conclusion as to its cause. Diseases of this nature are very often the result of causes affecting the plant many months previous to the visible development of the malady; therefore, reports upon the condition of the soil or atmosphere at the time of its greatest severity, should not hold too prominent a place in our conclusions with reference to its origin.

Assuming these observations to be in the main correct, we deduce from them various practical suggestions, some of which may be briefly mentioned. So far as our present knowledge extends, the constitution of the soil, either in its chemical or physical condition, or as affected in any degree by culture, exercises but little, if any influence, either in promoting or preventing mildew on the leaf; but, keeping in view the supposition that mildew is the result of weakened vitality, it is within the bounds of probability that a system of special culture may be reached which will fortify the plant against injury from such attacks.

The only preventives known are those of shelter from heavy dews or rains, either by mechanical or natural ap-

pliances, and applications of sulphur and other antidotes to the foliage. Experiments have proved that leaf-blights may be prevented by sheltering the foliage. How far expedients for this purpose can be profitably employed, is a question for grape-growers to decide. The simplest form of covering is a board-covered trellis; and, for amateur culture or private family use, the expense of such covering is not worthy of consideration.

It is also well known that sulphur applied occasionally during the period of growth will prevent mildew; as a simple statement, this has some value, but it is not sufficiently definite to enable the vine-grower to determine the extent or frequency of the applications necessary to secure a crop. Some seasons occur during which there is no necessity to apply remedies, and there is no periodical certainty in any as to when mildew may appear. Could we foresee its approach, so that preventive applications might be made at the proper time, and only at that time, the practice would then be reduced to a definite system, and be proportionately valuable.

This knowledge can be reached only by a series of exact hygrometric observations made in various grape-growing localities, under the general supervision of an experienced vegetable physiologist. It may be well to remark that the system of training hardy varieties to the top of the trellis, for the purpose of sheltering the more tender and valuable varieties below, has been suggested, and to a certain extent acted upon with favorable results. The ultimate effect of mildew is to check and retard growth, and thereby prevent proper maturity of the wood.

For all cultural purposes, it is sufficiently accurate to assume that the hardiness of a grape is simply its immunity from mildew.

When a grape is said to be too tender for our winters, we may safely conclude that, in other words, it is so subject to mildew that the growth fails to reach proper maturity.

Fruit-growers, above all others, should learn to call things by their proper names.

I have reason to believe that all the foreign wine grapes would withstand our winters, if not checked by mildew during growth. I have exposed matured growths of Black Hamburg, Muscat of Alexandria, Golden Chasselas, the Frontignan, and other foreign varieties, to a frost several degrees below zero, without being injured.

And all of our native varieties, excepting, of course, strictly southern species, are sufficiently hardy to stand over ordinary winters, if kept in health during summer. It is important to keep this in view.

I have already remarked that downy-leaved grapes are more subject to mildew than those whose leaves are smooth. The Fox family of grapes, *Vitis labrusca*, from which most of our popular cultivated varieties have been produced, — such as Isabella, Catawba, Diana, Rebecca, Concord, Iona, Ives's Seedling, etc., — are more subject both to mildew and rot, than varieties of the summer grapes, *Vitis aestivalis*, or the frost grape, *Vitis cordifolia*.

I have long since expressed my conviction that more attention should be given to the improvement of the two last-named species for wine grapes, than has hitherto been done.

For northern latitudes, the *Vitis cordifolia*, of which the Clinton is a familiar example, is worthy particular attention, not only on account of its intrinsic merits as a wine, and even as a table grape, but as a representative of a class of great hardihood and freedom from disease. Occasionally, we may observe mildew on the Clinton, on the upper surface of the foliage; but I have never seen it to obtain sufficiently so as to materially affect growth; and rot in the berry I have never seen. The leaf of this variety is green and smooth on both surfaces.

For more southern climates the varieties of *Vitis aestivalis* will be suitable. Among these may be mentioned Norton's Virginia Seedling, Herbemont, Lenoir, and Cynthiana. These comprise some of our best wine grapes, but require a longer season to attain maturity than many of the Fox family, and

will not reach perfection at the North except in favorable seasons. Some varieties of this class are also our finest table grapes. The leaf of this species is but slightly downy. Some of the varieties of *Vitis labrusca* are the most useful grapes in cultivation; the Concord has, for many years, attained a supremacy in this respect. The Ives' Seedling has recently presented claims that are beginning to be acknowledged.

The Hartford Prolific is one of the earliest varieties, and largely cultivated as such; but all of these are popular, simply because they are hardier than otherwise superior varieties of their class. Were it not so, we should all most certainly prefer the Adirondack, the earliest of all good grapes; the Catawba, so well known for its excellent qualities; the Iowa, highest flavored in the list; the Rebecca and Maxatawny, white grapes, that, when in perfection, may be compared to a Golden Chasselas; as also several of Rogers's hybrids, which, practically, may be referred to this class for their main characteristics of growth and habit.

This section of our native grapes has received more attention than any of the others. The size of the berries and fine appearance of the branches have encouraged a disposition to improvement, and many of the latter seedlings are of superior quality; but they are more subject to disease than are others of the American species. Even in their native habitats, the wild fox grapes of the woods will be found suffering from the same rot and mildew so prevalent among their more civilized descendants.

And here I would remark, that a wide field lies open for improving our native grapes; a field that has scarcely been trod upon. I alluded to the hybridization of the native species with each other, in contradistinction to the use of the foreign grape for this purpose, which tends to perpetuate the diseases to which the foreign grape is liable in this climate. We have in the Delaware grape an example of what may be expected from this combination of American species — a hybrid between the *Vitis labrusca* and *Vitis aestivalis*.

It partakes of the tendency to leaf mildew of the former; the freedom from rot in berry of the latter, and a fruit superior to both.

Great results await us in this direction.

Place a berry having the size and fine appearance of the Concord or the Union Village on the bunch of Norton's Virginia Seedling or the *Devereaux*, combining all their good qualities, and there is nothing quixotic in the expectation of realizing a fruit that will equal, in its magnificent dimensions, the famed grape of Syria.

With regard to the origin of fungoid diseases, I have designedly refrained from expressing any emphatic opinion. This question is still a subject of inquiry with botanists, whether it is a cause or consequence of disease. My observations lead me to the conclusion that it is both. One thing, however, is certain, that fruit-growers must, sooner or later, recognize in fungoid growths their greatest enemy to success. As closely connected with this subject, it may not be out of place here to mention a circumstance that deeply concerns pomologists as a body. I allude to the exceedingly vague and loose, if not untruthful, expressions constantly used in the description of new grapes. I question whether, among all the numerous new varieties that have been introduced during the past fifteen years, any one of them has been described without special mention having been made of its entire exemption from mildew. It is charitable to suppose that this may be true in certain localities, but it is not the whole truth; and to presume that any one variety of fruit, grain, or vegetable esculent, can be found to adapt itself equally well over a country whose climates extend from the frigid to the torrid zones, is utterly inconsistent with our knowledge of vegetable economy.

The following paper was prepared by Mr. A. Fendler, St. Louis Co., Mo., and read by Mr. Wm. Muir: —

PLANT DISEASES.

BY MR. A. FENDLER.

A microscope of good magnifying power reveals to us the fact that every part of the organized fabric or tissue of trees and plants consists of a multitude of separate cavities. Any slice of the root or other part of the plant thus magnified presents somewhat the shape of a honey-comb, and is in fact an aggregate of more or less elongated little bladders or sacs called *cells*.

The whole potentiality of the plant exists in the individual cells of which it is made up. In them its products are elaborated, and all the vital operations carried on. The young and most vitally active cells are found between the wood and the bark, and in all parts of *recent* growth, such as buds, young shoots, and rootlets. In these *active* cells the transformation of the crude sap into new vegetable tissue is performed.

Water is the vehicle by which the great bulk of the plant's food is conveyed, first through the root, and subsequently through the active cells of the whole plant. This conveyance is either retarded or accelerated according to the less or more vigorous perspiration of vapor through the surface-pores, and exhalation from the breathing-pores of the leaves In the interesting experiments of Dr. Hales, a vine, with a surface of foliage equal to twelve square feet, exhaled or perspired at the rate of five or six ounces of water a day. This, of course, is during the period of active vegetation, and in dry weather.

The breathing pores are situated principally on the lower side of the leaves, and so arranged as to afford free communication between the external air and the whole interior space of the leaf. They are a kind of safeguard against excessive evaporation in dry weather: they open only when they are moistened, either on the inside or outside, and contract when dry on *both* sides, so that if the plant contains an abundance of moisture, these breathing pores remain open

and allow it to escape; but when the plant, in dry weather, suffers for want of moisture, the breathing pores close up. Yet they will also open, if moistened from the *outside alone*, no matter how dry the plant may be inside; and thus the superabundant humidity of the atmosphere may find its way far into the tissue of the plant by what meteorologists call "the force of vapor."

We all know the powerful pressure of heated steam as daily exhibited in the piston-rod of steam-engines. This is done by the repelling force of the heated particles of aqueous vapor. The more heated and crowded they are, the greater their repelling force will be.

But even vapor of a *low* temperature exerts a certain amount of pressure that can be made manifest and measured. It makes no difference whether the vapor is heated artificially or by the sun, it always presses in proportion to its density and temperature, even when free and unconfined as in the open atmosphere. It presses not only through the breathing pores of the leaves, but also through the common pores of the bark of tender shoots and the pores of the skin of young fruit, and enters the interior of the plant, provided the plant is comparatively *void of moisture*, and the atmosphere *saturated* with it and of a *high temperature* at the same time.

In our climate of the Mississippi Valley, and further east, this state of the atmosphere may often be noticed during the months of June and July, the aqueous vapor being supplied by the moisture bearing southeast and south-southeast winds. The lower strata of the atmosphere are then charged with a superabundance of humidity in the state of invisible vapor.

If, at this period of hot, sultry weather, showers of rain are scant and far between, not sufficient to keep the soil in its normal state of moisture, the roots of a plant may be languishing for want of water, at the same time that its overground part is immersed in a bath of warm vapor. This immersion, though stopping the evaporation from the leaves,

does not matter so much as long as the roots have a sufficiency of moisture. For this moisture, imbibed by the roots and carried up to the surface of the leaves, will, in the form of vapor or steam, effectually hinder the outside steam from entering the tissue of the plant. But when there is no moisture in the ground, the outside steam encounters nothing to oppose its own force, and will have free access through the pores of leaves, berries, and young shoots.

It may easily be imagined that this reversed course of nature is of no advantage to vegetation : on the contrary, it cannot be but highly injurious.

How would men and animals prosper if, instead of receiving their daily liquid and solid food through the mouth and stomach, they were treated unremittingly for days and nights to a bath of warm vapor, though that vapor contained a liberal admixture of some nourishing volatile ingredients? Far better for the system, both animal and vegetable, to receive its sustenance in the ordinary way, even in insufficient, starving quantities, than to have it forced through organs unfit for this office. For a vegetable needs besides the carbonic acid its leaves take from the atmosphere, a vast quantity of dissolved mineral substances, which it necessarily must take up from the soil, and can do by no other organ but the root.

Hence, being exposed to the unnatural condition mentioned above, the active cells in the young fruit and leaves will do their work but very incompletely. In consequence of this defective action, the healthy transformation of their sap will run into putrid fermentation, and then the ever-present spores of the fungus soon find out their natural element in which they can thrive and luxuriate. Then we are told the fungus in the shape of mildew and rot has attacked and diseased our *healthy* vines and berries. The fungus, no doubt, when once established, may accelerate the disease, but cannot be the cause of it, as long as the sap has not been vitiated by the disturbed functions of the plant.

Now, it is the task of the horticulturist and fruit-grower to prevent this forcing in of steam from the outside. And it can be done, as I have reason to believe, by keeping the inside of the plant, that is, its interior cells and vessels, filled with humidity, so as to counteract by an equally strong opposite pressure from within the deleterious pressure from without. And this we can do by planting the tree or vine in a locality where its roots may find a moderate but constant supply of aqueous vapor emitted from water stored up in some way or other between cracks, crevices, loose, pebbly soil, or fed by the *underground* exhalations from wells, cisterns, drains, and watercourses.

Some authors contend that the cause of the grape rot is to be found in our cold, *dry* night-air, and lay great stress on the intense radiation of caloric through this dry air. What few facts I could gather this summer about the rot of the Catawba in St. Louis County, point to the period from the second to the seventh of July, as the time at which the rot made its first appearance. According to my psychrometrical observations, the above period was one of extreme atmospheric humidity, especially during nights, the temperature high, and the atmosphere in such a condition that very little, if any, radiation could go on. Moreover, I know of an instance where of two Catawba grape-vines, planted a short distance apart on the same premises, one rots the grapes very badly every year, while the other, with fine crops for thirteen years in succession, has never exhibited the least sign of rot. In 1864 it had no crop, because the buds were killed by twenty-two degrees below zero.

Both these vines are influenced by the same atmospheric conditions, and exposed to the same condition of caloric. Hence, radiation cannot be the cause of rot. There is, however, a cistern near the healthy one, from which its rootlets can draw an even, steady, and never-failing supply of humidity, most likely in the condition of vapor.

I could cite other instances where the moisture between soil and atmosphere being properly balanced, keeps not only

the grape free from rot and mildew, but also the pear-tree free from blight, and to some extent the peach-tree free from having its buds killed by late frosts in spring.

To the professional gardener and florist it is a well-known fact, observable every time he is repotting plants, that the outside of the ball of earth, where it had been in contact with the inside of the pot, is one mass of fine fibrous roots, while the more interior portion of the ball contains scarcely any at all. The reason for this is that the burnt clay of which the pot consists, sucks up and holds with great tenacity a considerable quantity of water within its pores, from which the rootlets, without being immersed in the liquid, can draw whenever they need it. Broken pieces of rock, especially the more porous kind, also narrow crevices in rock, act in a similar manner to pottery, and if gradually supplied in some way or other with the necessary amount of watery vapor, may give the desired result.

In advancing these views, I cannot help expressing a wish to see them tested thoroughly. I will do my part in taking, as heretofore, careful observations of the state of the weather, and especially its humidity day and night, if owners of vineyards of this and our neighboring States will do their part in observing closely the time of appearance of the *first* signs of rot, its progress and course; also in noticing vines of one and the same variety that may happen to be exempt from rot, while all the rest are affected by it; also the situation of these anomalous cases — whether near a drain, cistern, well, or on loose, pebbly, porous banks of running streams; or beneath the eaves of buildings, where the rain drips from the roof and is stored up within the crevices of stone foundations. By comparing notes we may then come in possession of many valuable facts and much useful information, and do our share in helping to settle a question that has so long exercised the ingenuity of fruit-growers and philosophers.

DISCUSSION ON VARIETIES OF GRAPES.

IONA.

HUSMANN, of Mo. — Four years ago I planted a dozen of the best Iona vines I could obtain. I also grafted it on Northern Muscadine stock. They have all grown less and less until I have no vines left except those grafted on Northern Muscadine. My experience with it is unfavorable to it. The vine mildews badly, and the fruit rots.

MUIR, of Missouri. — I bought some of the first vines sent out. It has held its foliage well with me. The fruit-buds were killed the past season. It has proved a satisfactory grower with me, making plenty of short-jointed wood. It has no mildew nor affection of the leaf. I have not fruited it.

DR. EDWARDS. — I have it growing at Kirkwood. Last year the vines grew well; this year poorly. Vines of it do not grow alike.

BATEHAM. — Along the Lake Erie shore for 200 miles there are not many vines in bearing; but in nine cases out of ten the growth of the vine and promise of fruit is exceedingly satisfactory. I do find in some cases a trouble with the leaf. On sand it did well; on richer ground it mildewed badly, and made poor growth. On dark-colored moist soil it failed. We must keep in mind the soil when talking of the relative merits of fruits, and of the merits of any fruit in a given locality. Locality does not mean a town, county, or section of a state. It means a spot of ground. The spot of ground may not be one hundred yards from another spot of ground on which entirely dissimilar results are obtained. Our talk, therefore, should apply to different soils, not to localities. About Dunkirk, North-East, and Erie, I do not know an instance of the Iona failing when planted on good soil, and given good culture. This side of Cleveland it is doing splendidly, — leaf, vine, and fruit. We feel as confident as we can feel with our experience, that this is going to prove a profitable grape.

It is not wise to be hasty in condemning this or any other variety.

JORDON. — I have listened with a good deal of interest to papers relating to vegetable physiology and the diseases of the grape. Good clean culture is essential to success. Moisture is important, and mulching by stirring the soil supplies it. On some vineyards here we take ten to fifteen tons per acre. The grape requires a great amount of moisture. If I want grapes on my ground and in this climate, I shall plant the Concord. My second choice for money-making would be the Norton's Virginia or Clinton; I hardly know which. The Clinton will do better on low rich soil than the Norton. It is an important idea, which is to be kept in mind, that it is the nature of the vine to reproduce itself in the shape of seed. We must assist nature in our culture. That is what cultivation is, — to aid the vine to reproduce itself. If we fail in giving this aid, we fail in the object of culture. Close summer-pruning should be done with an object in view. The grape we cultivate for profit must have healthy foliage. We ought not to condemn a variety because of one failure.

COL. HUSMANN. — I believe in the doctrine, "By their fruits ye shall know them." I was hoping Dr. Grant would be here, that I might ask him how many grapes he grew.

GRIFFITH, North-East, Pa. — I have planted twenty thousand Ionas in a vineyard with a view of making money out of them. Before doing so, I looked over the country to see the fruit. I went into it, I think, understandingly. The Lake-Shore Grape-Growers' Association visited my vineyard. I think they will say it is the most perfect vineyard they ever saw. I have now one hundred and fifty thousand vines planted. Mr. Knox cannot grow the Iona; I can. Mr. Husmann cannot grow it, but he can grow other grapes. The Iona is not to be condemned in all places because it fails in one; nor to be recommended for all places because it succeeds in one. But, so far as I know and can learn, every bearing vine on the Lake Shore is doing

well. It cannot compare with the Concord all over the country. It will surely get hurt if it undertakes to keep company with the Concord. I cultivate my vineyard thoroughly. You must cultivate thoroughly if you want healthy foliage, and to get good crops.

HUSMANN. — I do not desire to run down Dr. Grant or his grape. But I desire to know if Dr. Grant has made the Iona productive and valuable as a fruit. If I recommend a variety, I can show what it *has done*; and I base my recommendations upon what it has accomplished for me.

GRIFFITH. — I am frank to say that the Iona has been pettifogged out of all conscience before the country. I say it with greater freedom because I have faith in it. Dr. Grant has injured it by his mode of pushing it. My conviction is that we have a large extent of country that will produce grapes; but the man who plants *largely of any untested variety will be foolish.*

BARRY. — I would like to know who has the Iona in bearing. Men who have simply propagated it are not competent to speak of it.

HOAG. — I planted it two years ago, and had an abundant crop of fruit from it this year. It is hardy and productive with me. I feel well satisfied with it.

BABCOCK, Niagara Co., N.Y. — The Iona where fruited the present season has done well.

IVES' SEEDLING.

STEPHENS. — I should like to hear something of the Ives' Seedling. I think it may go along with the Concord without trouble.

MEARS, of Ohio. — Last week I presented the fruit of the Ives' Seedling at the meeting of the Illinois State Horticultural Society at Cobden. I am sorry I cannot present the vineyard here. I have known it nine years. Have cultivated it two years. I have never seen any mildew upon it, nor rot. Have seen heavy crops of fruit on three-year-old vines. The bunches are compact, solid, and well developed

Its reputation as a wine-grape, with those who know it best, is good.

Elliott. — I hear it is rotting in Cincinnati.

Mears. — There was no rot on it a week ago. It has a good flavor according to my taste; but as Mr. Knox has asserted, that is simply a matter of taste. Any man who likes the flavor of the Concord will like its flavor better. The average product of wine from it is not over five hundred gallons per acre.

Meehan. — I am travelling in search of information. When I started from home, I was of the impression that the Ives' Seedling was only fit for wine-making. At Cincinnati I was astonished to find its quality for eating quite equal to the Concord. I do not believe it will be entirely free from rot; but I think it will equal the Concord as a healthy grape. Its wine is regarded as quite equal to the Norton's Virginia. Perhaps the price the wine brings now is due to the fact that it is wanted so generally for the purpose of testing it. It is not quite as early as the Concord, but in flavor it is quite equal to it.

Husmann. — With me the vine has made a strong growth. It may be a good bearer, but it is tardy I think. I regard the wine of the Concord quite superior to that of the Ives, so far as I have tested it.

ROGERS'S HYBRIDS.

Dr. Warder's correspondence with Mr. Rogers relative to dropping the numbers of his grapes, and giving them names, has resulted in his expressing his preference for the numbers.

Requa. — I think Mr. Rogers has recently decided to name his grapes.

IVES' SEEDLING AGAIN.

Griffith. — The Ives proposes to compete with the Iona as a wine grape. The Ives is likely to occupy more territory than any grape except the Concord; and it will

probably compete closely with that. I do not believe it will ever be established as a table grape. It is a good wine grape.

Dr. Warder. — It tells its own story if you get within a quarter of a mile of it. It is healthy, hardy, vigorous, and productive. It is not so refined a grape as some, but the wine answers for itself. The productiveness of a grape depends upon latitude and longitude. At Cincinnati it is earlier than the Concord, ripening with the Hartford Prolific.

Knox. — It ripens earlier than the Concord with me. I have never discovered disease on the vine or the fruit of the Ives.

Meehan. — I saw a few berries on which a little rot had appeared at Cincinnati. In one vineyard I saw a disease resembling the pear-blight in the pear. In one vineyard of two thousand vines I found two hundred vines dead.

Dr. Warder. — What vineyard?

Meehan. — Mr. Warring's.

Dr. Warder. — The death of those vines was caused by a borer. It operates on both the Catawba and the Concord.

Kauffman. — We want to know of the productiveness of the Ives as compared with the Concord. The Concord will produce from five to eight tons of grapes to the acre. What will the Ives do?

Heaver. — I have long been acquainted with the Ives. I can positively assure this assembly, that if our friends at Hermann choose to adhere to the Concord, we at Cincinnati will be content to grow the Ives.

Husmann. — I have grown fifteen tons of the Concord per acre. I have grown at the rate of two thousand five hundred gallons of pure juice of the Concord grape per acre — *pure juice* — Dr. Warder!

Jordon. — Gentlemen tell us that we are growing too much fruit on the Concord. We ask them to give us the proof of it. I have grown eleven thousand pounds of grapes on five hundred vines; and I will show gentlemen who choose to visit my place that the vines are not dead.

One Concord vine, the first year fruiting, produced seventy-five pounds of grapes; the second year, one hundred and five pounds. This year the late frosts shortened the crops.

Taft. — I move that in the discussion of grapes and grape culture, the character of the soil on which grapes are cultivated be given.

Husmann. — We have not got through talking of varieties I hope; I should like to hear what experience gentlemen have had with the Isabella.

Wier. — I had one vine out of a dozen that lived through the first winter after planting.

Elliott. — I suggest that in the discussion of varieties of grapes, gentlemen who have fruited the variety under discussion only speak. The experience of men who have had vines but a year or two, and who have never fruited them, is of no value as a guide.

Taylor, of Kentucky. — My experience is that we could not grow healthy vines of the Israella and Iona out of doors. The wood does not mature. If they will not do well in the nursery, how can they be expected to do better in the vineyard?

Peabody. — Vines of the Israella, planted on a bluff, held their foliage well. The fruit set and ripened well, except during two or three days, when the weather was favorable for the rot. It ripened its fruit with me two or three days later than the Hartford Prolific. The soil is a heavy clay upon a loose formation.

Meehan. — What advantage has the Israella over the Logan?

Taft. — None.

Griffith. — On the Lake Shore I have seen a few plants bearing in half a dozen localities. The vines were healthy and full of fruit, which ripened with the Hartford Prolific nearly — not quite as early perhaps. I do not think the quality of its fruit remarkable. It has not much character one way or the other. It is a "clever grape."

NORTON'S VRIGINIA.

TAFT. — It is a good grower on Western white oak soils, and a good bearer. It is a good wine, though not a good table grape. My soil is clay and sand mixed. It does best on the stiffest soils.

ELLIOTT. — On clay shales, on the Lake Shore, I have found it in the best possible condition.

SAUNDERS. — I found it fruiting well at Col. Husmann's at Hermann. It is tender North in localities. It seldom ripens its wood so as to stand the winter. It is a southern grape.

GRIFFITH. — I have had it in bearing six years. It ripened its wood well; never covered it; is healthy and productive. It is as hardy as a beech-tree. It ripens before the Catawba.

HUSMANN. — It is a good deal like the Ives. It speaks for itself. If you cannot grow Norton's Virginia so as to produce more than one hundred and fifty gallons of wine per acre at Cincinnati, you ought to quit its culture. We grow easy from six hundred to seven hundred gallons per acre of it. It is not an early bearer. The older it gets the better it grows. Fruit it by spurs on old wood. There are only three varieties of grapes that I know of exempt from disease — the Arkansas, Cynthiana, and Norton's Virginia. It has been said that every grape rots. If the Norton's Virginia rots, I have yet to see it. I have never seen it tender either. I have come to the conclusion that some kinds of grape can be grown on any soil we may have; but certain soils will not grow certain grapes. We must divest ourselves of the idea that one grape will do for all localities. We must seek varieties adapted to our respective localities and soils. The man who is not willing to experiment to secure such varieties, had better quit the business.

GRIFFITH. — It is no great virtue to realize that each different variety of grapes has its peculiar home. I do not find fault with nurserymen who have sent the same grape all over the country. The universal test has resulted in infor-

mation which it was necessary to obtain. My friend Husmann has been a great benefactor as a grape propagator; so has Dr. Grant. My experience is that it is the fault of the grape culturist that; not that he misapprehends the character and adaptation of his soil to grape culture so much, as his want of knowledge of climatic influences, and how to control them. Soils of all sorts produce grapes. When we lack growth on a soil we can stimulate the vine; if we get too much growth, we can check it. But lack of proper culture and of discernment in summer-pruning, is the chief cause of failure with grape-growers.

Foster, Muscatine, Iowa. — It is my experience that a rich corn soil is not adapted to grapes. A wheat soil is better. I do not think grapes flourish well on a very rich soil. The wood does not ripen; the foliage is not healthy. Trenching, so far as I have observed, is a damage to the grape. Where I have observed it, the growth resulting was not so very vigorous, and the grapes did not look healthy. The subsoil is tolerably stiff clay where this deep trenching was done. On untrenched ground, in the same neighborhood, the grape does well.

Williams, Montclair, N. J. — Last season I fixed on three varieties, and three only, to recommend for general cultivation with safety; viz., Clinton, Concord, and Hartford Prolific. This season the Hartford was the healthiest of all. Others rotted, and mildewed badly, in fruit or foliage.

The President suggested that brief testimony only be given of varieties.

CREVELING.

Doing well at Alton, Ill.; Pittsburgh, Pa.; Rochester, N. Y.; Hermann, Mo.; in Massachusetts; St. Louis Co., Mo.; and generally, so far as testimony given is an index.

ROGERS'S NO. 3

Promising at Hermann, Pittsburgh, in Massachusetts, and at Alton, Ill., though the bunches are small.

ROGERS'S NO. 1.

HUSMANN. — At Hermann it does well, and makes good wine.

BATEHAM. — On the Lake Shore it ripens too late.

KAUFFMAN. — It fails to ripen in Iowa.

PRESIDENT. — It ripens late in Massachusetts.

———. — It does well at Hannibal, Missouri.

ROGERS'S NO. 4.

DOWNING. — It is the best of all the Rogers grapes. At Alton, Illinois, one of the best of black grapes; good at Hannibal; a favorite in Massachusetts.

PRESIDENT. — I cannot refrain from commending it.

ROGERS'S NO. 9.

Good at Hermann; promising for wine. Early in Ohio; one of the best.

PRESIDENT. — It is one of the best as to flavor. Some have selected No. 9 as preferable to the Delaware.

ROGERS'S NO. 15.

Rots at Newburgh, N.Y.; rots and mildews in Iowa; fine at Cleveland, O., bearing large bunches; liable to mildew in Massachusetts.

ROGERS'S NO. 19.

Best of all in Iowa; good at Hermann; good at Newburgh, but small bunch; good along the Lake Shore.

PRESIDENT. — All the Rogers grapes, when removed from Boston, West and South, improved so that Eastern cultivators would scarcely recognize them.

BABCOCK. — Rogers's 4, 15, and 19, all promise excellently in Niagara, N.Y. Hartford and Delaware among the most

profitable. One vineyard of Hartford, ten years bearing, has always borne a good crop. Our best soils for the grape are clay. Sandy soils are to be avoided.

SALEM, OR NO. 22.

REQUA, of N.Y. — Its habit is good; has little mildew; is early and promising.

SAUNDERS. — It is a fine grape, of good quality.

HUSMANN. — It is not very satisfactory at Hermann.

DR. SPALDING. — I have grown it this season. The foliage is entirely healthy; and it is promising as to health.

GRIFFITH. — It is a success on the Lake Shore.

PRESIDENT. — It is a healthy grape, of good quality.

ROGERS'S NO. 34.

MANNING. — It is late at Boston.

PRESIDENT. — Neither Mr. Rogers nor myself have ever ripened it.

DR. EDWARDS. — If I have it, it ripens early.

MAXATAWNY.

Good, hardy, but a little late in Ohio. Very good at Pittsburgh.

MARTHA.

HUSMANN. — It will make a good white wine. It is healthy, hardy, and bears abundant crops. The bunch is small, and medium as to compactness.

KNOX. — It is promising with me, and I think it will prove one of our valuable white grapes.

HOAG, of N.Y. — It does well with us.

ADIRONDACK.

Doing well at Rochester, N.Y.; also at Alton, Ill.; poorly at Hermann and Hannibal, Mo.; grows and produces

well at Lockport, N.Y.; don't succeed well at Newburgh, N.Y., nor at Pittsburgh, Pa.; does well in the District of Columbia.

CYNTHIANA.

HUSMANN. — It is a promising grape for wine. It produces a wine of finer flavor, but not so good for medicinal purposes as Norton's Virginia. It is productive, and does not rot.

DR. SPALDING. — Wine experts in Europe preferred the wine of this grape over many of their own wines. It will make a wine that will do to export to Europe.

COLEMAN. — It makes the best red wine produced in America.

Adjourned.

EVENING SESSION.

The Society met at half-past seven o'clock, President Wilder in the chair.

COL. HUSMANN. — I think the Society would be glad to have President Wilder give the result of his observations in Europe as to the relative merits of American and European wines.

The Society seconded the suggestion.

PRESIDENT. — On my arrival in Paris, I was appointed one of the American Commissioners; also Mr. Barry; and we were charged with the duty of looking after the interests of American wine-growers. We found that the jurors had passed upon all wines, giving ours only a partial examination. To illustrate how they were examined, it is only necessary to state, that of ten kinds of American wines sent by one exhibiter, a single bottle of one variety — viz., of Catawba — was taken as a sample of his wines; and it was upon this test that judgment upon his wines was formed. I appealed to the Imperial Commissioners for a re-examination of the American wines, but could not obtain it. Knowing that you would hold us accountable for the manner in

which your wines were disposed of, we procured permission to have a special committee appointed. We had *carte blanche* to open and test all wines. We invited the presence and aid of some of the most eminent judges of wine present at the Exposition. Our wines had been kept in an unfavorable location over the kitchen of the American restaurant. Many of them were soured; none of them had escaped the effect of the unfavorable influences in which they had been kept. We, with the gentlemen associated with us, compared our wines with some of the best wines from the Rhine. Our European friends tested our wines in competition with theirs. They said to us, "If you can make such wines in America, you will never want our wines. You are on the right track." With experience and care, our wines will compare favorably with the best Rhine wines. The opinion prevailed among the gentlemen of the committee that our wines compared favorably with the wines of the Rhine. We visited the cellars and tasted of the Johannisberg wines. We never tasted such wines before. The best of these are sold at auction, by sample, for the great personages of Europe. They would cost fifteen dollars per bottle here. I have tasted Delaware, Diana, and Herbemont wines, which, when made well from ripe grapes, will compare favorably with the majority of the Johannisberg and Steinberg wines. When we know how to give the same care and skill in treatment to the manufacture of our wines that is given to those of Europe, we shall not need to import wines.

Our red wines compared very favorably with their red wines. Our Norton's Virginia and Ives' Seedling wines were good and had preserved their characteristics, and eminent judges said the American wines were the only wines at the Exposition that would have stood the same tests under such unfavorable circumstances. The more you know of foreign wines, the better you will be satisfied with those of our own production.

The Johannisberg estate embraces but a small tract of land. Only sixty thousand bottles of wine are made there annually.

The soil is a hard cake of clay — as hard as a brick. It is only disturbed with a two-pronged hoe.

Barry. — I do not know that I want to add any thing to what President Wilder has said. The Johannisberg wine is made from the red Reisling grape. The hill on which the Johannisberg estate stands is a gentle elevation, with a table land on the summit. On the upper side, where the ground ascended, it was covered with vines. On the lower side it was cultivated with farm crops. The finest wines are produced from grapes grown on the highest slopes and grounds. The vines on this stiff clay were very healthy. The vines are not old. We learned that they renew them once in ten, fifteen, or twenty years. We saw portions of the grounds where the vines had been removed, and rye was growing preparatory to replanting with vineyard. The vines are trained to stakes three or four feet high.

President. — I desire to add a word suggested by the remarks of Mr. Barry. Grapes grown on the low land make poor wine. On the patches where the soil radiated heat most, we found the wines were best. They do not plant on Northern slopes. The choice grapes are grown in sheltered sunny nooks on the South and East slopes. From grapes grown in such exposures the choicest wines are made. Nowhere are the seasons always propitious. Out of ten years, we learned they had had but three good, three middling, and four very bad seasons. So you see we have equal advantages for grape-growing and wine-making here. And I have no doubt that our enterprise will develop skill and care that shall result in wines of a higher standard of excellence than we have yet attained.

Barry. — On one side of the Rhine the Reisling grape is cultivated with great success; but in localities on the same side it does not make as good wine as in others. It is a late grape. On the other side of the Rhine they cultivate other varieties.

Peabody, St. Louis. — To what extent, in these bad years, do they introduce water and sugar to tone up their wines?

Barry. — We made inquiries upon this point, but could ascertain nothing about it. They did not seem disposed to talk on that subject.

Col. Husman offered the following resolution, which was adopted unanimously : —

Resolved, That the thanks of this Society be and are hereby given to its President, Hon. Marshall P. Wilder, and those who accompanied him to Europe, for the eminent service done by them in the advancement of knowledge respecting horticulture in America.

Mr. Batcham offered the following, which was adopted : —

Resolved, That President Wilder and Mr. Barry be requested to write out an account of their observations on foreign and American wines at the Paris Exposition, and through the vineyards of Europe visited by them, and the same be for publication in the report of this Society.

Note by Secretary. — These gentlemen, as members of the commission, having submitted a report to the United States government, beg leave to decline compliance with the above resolution.

AN INSECT TALK.

Dr. Warder in the chair.

Dr. Trimble, of New Jersey, was called out on the subject of the Insect Enemies of Fruit. Upon taking the stand, he observed, that when quite a young man he had travelled through this part of the country, when but little fruit was to be seen except pawpaws and wild grapes. Now, judging from the two thousand four hundred plates upon the tables up stairs, this great West is probably the best fruit-growing country in the world. All the fruits on exhibition show more or less marks of both the curculio and apple-moth.

Of the four hundred thousand species of insects known to naturalists, only some ten or twelve are of much consequence to the fruit-grower, and two of these do more injury than all the others; viz., the curculio and codling-moth.

While examining the apples and pears from the State of Iowa, I met with, and was introduced to, the President of the

Iowa State Horticultural Society, and at once noticed some apple-worms, as they are called, creeping about on his coat. When I pointed them out to him, — "Oh," says he, "I have some pears in my pockets," and then remarked that he had not cut into a pear this season that was not wormy. This is bad for Iowa, but we know that we have this enemy as well as the curculio in all our States. They are everywhere, and will continue to increase just in proportion as we multiply fruit-trees and increase their food.

Now what shall we do? To me nothing is plainer — destroy all these insects in their larvæ or embryo condition.

All the fruits destroyed by the curculio fall to the ground prematurely and before the grub is full-grown, and the grub remains in that fruit, feeding upon it for some time, often many days, before it comes to maturity. Your stock, whether hogs, cattle, horses, or sheep will eat all that fruit if they have a chance. If your stock cannot be permitted in your orchards, this young fruit can be gathered by hand, and fed to them or burnt. Did all the people do this faithfully, the curculio question would soon be settled. All other remedies ever proposed — such as washes, smokes, dustings, or planting over pavements, or water, etc., etc., are utterly useless.

We have ichneumon and parasite flies that keep in check some of our insect enemies, and especially the caterpillars, but I know of none that control the curculio; still I have seen an account from some gentleman in Canada, that a minute fly had been seen to deposit its eggs in the eggs of the curculio. This is possible. The eggs of many caterpillars are thus destroyed. The span-worms in New York and Philadelphia, and the canker-worms in many parts of New England, have been almost brought to an end within the last two years in this way.

The grub of the curculio, when it has come to maturity in the young fruit, passes into the ground a few inches, there to undergo its transformation — changing from grub to beetle. This is a delicate process with all insects; and I have found

by experiments, frequently repeated, that if the earth is perfectly dry during this time, this insect will perish. This accounts for an occasional comparative exemption from the curculio. I have had crops of apricots and plums with but very little trouble from the curculio the year succeeding such a drought.

What I have said as to stock as a means of destroying the curculio in its embryo condition, will apply to some extent also to the caterpillar of the codling-moth, or apple-worm, as many of the apples and pears containing this worm will fall prematurely also. Even if you should have no curculio, if the apple-moth has made its appearance in your orchards, the stock will be useful.

But there is a difference in these two enemies. The falling of the fruit containing the embryo apple-worm is not so universal as with the grub of the curculio — a large portion of the former leaving the fruit before it falls. The larva of this enemy does not go into the ground as the grub of the curculio does, but makes a cocoon, and where your trees are old enough to have rough bark or scales upon them, will very often creep under these scales, and there form its little cocoon. For several years past I have been experimenting with traps of hay ropes wrapped around the body of the tree, and have caught more than one thousand on a single tree.

Whether this plan will enable the fruit-grower to control the apple-worm, remains to be seen. Two or three years' experience is not sufficient to determine absolutely. But the trapping of a thousand, or two hundred, or even fifty, diminishes by so many the enemies of the next crop; and in several instances I have counted the number of pears upon small trees that contained these caterpillars, and upon applying one of these hay ropes to each tree, have caught just as many worms as were bred in those pears.

There are two broods of this enemy a year — of the curculio only one. The female curculio has from twenty-five to thirty eggs to deposit, the female apple-moth two or

three hundred. Occasionally parasites find them. Jules sometimes eat them. These are aids that we should be thankful for, but in addition, give the stock a chance and try the hay ropes.

Holcomb, South Pass, Ill. — We think that in South Illinois there are two broods. After the first brood has ceased to work, the fruit is stung again; the wound is crescent-shaped — a true curculio sting. The length of the season is such, that I think a second deposit of eggs is made.

Dr. Trimble. — It must be a different species, I think. The only time swine can be of any service in an orchard, except during the time of the falling of the fruit, is when the curculio is in the ground.

Earle, South Pass, Ill. — I dislike to have the impression go out, that the expense of destroying the curculio, that is such a pest in the peach, is an obstacle to successful orchard culture. An orchard of eleven hundred peach-trees, in our neighborhood, was kept free from the curculio at an expense of two dollars per day during the curculio season; and the fruit which resulted paid handsomely for this expense incurred in saving it. It is practicable to kill the curculio by the use of bumpers and sheets, after Dr. Hull's method, which is very generally adopted, and with success, by our peach orchardist.

On motion of William Saunders, the thanks of the Society were voted Dr. Trimble, for his very graphic talk on insects.

Adjourned.

THIRD DAY.

MORNING SESSION.

The Society met at nine o'clock, President Wilder in the chair.

Reports of Committees were received. These reports are to be found at the close of the proceedings.

NEXT MEETING.

Invitations were tendered from Providence, R.I., Philadelphia, and Cincinnati, for the next meeting. On motion of Mr. Barry, the Society voted to hold its next meeting, two years hence, at Philadelphia, the time to be fixed by the President.

Dr. Trimble offered the following preamble and resolution, which was adopted: —

Of the insect enemies of the fruit-growers, the curculio is the most important. It is not only destructive of all the stone fruits, but also the apple, pear, and quince. In the large collection of fruits, comprising two thousand four hundred plates, on exhibition at the Convention, and brought together from many States, there is unmistakable evidence of the presence of this insidious foe; and,

Whereas, a very large number of remedies have been proposed for the protection of our fruits, such as washes with lime, sulphur, whale-oil, soap, etc., etc., as ingredients, offensive smells, planting trees leaning over water, boring holes in trees and plugging in sulphur, mercury, and many other drugs, none of which have been found successful in practice, and only tend to delude the inexperienced fruit-grower with false hopes; therefore,

Resolved, That the American Pomological Society recommend fruit-growers to promptly and carefully destroy all the blighted fruits as they fall from the trees, as most of them contain the grub or embryo of the future curculio, and in many cases also the larvæ of the "codling moth."

Col. Husmann invited the Society to visit the vineyard at Hermann, tendering free transportation, on behalf of the Pacific Railway, to such as chose to accept.

Mr. J. M. Jordan invited the members and citizens present to visit his vineyard, on Grand Avenue, in the morning, taking the Franklin-Avenue cars.

A letter from Mr. E. R. Mason was read, inviting the Society to his vineyard, nine miles out on the Pacific Railroad, car-passage free.

A vote of thanks was introduced by G. Pauls, and passed, to Mr. A. Fendler, for his valuable paper on the grape.

On motion of Mr. Earle, a vote of thanks was proffered Mr. Husmann and the officers of the Pacific Railway, for their liberality.

EXOTIC GRAPES IN OPEN AIR.

Dr. Hull. — I desire to call the attention of the Society to the fact, that Mr. Jewett, of this city, is growing exotic grapes successfully out of doors, planted with our native sorts. He has Black Hamburgs, with twice or three times the amount of fruit upon them there is upon native sorts; also Chasselas grapes. It is an important fact, and deserves the Society's attention.

There were calls for Mr. Jewett.

Jewett. — I first commenced the culture of exotic grapes out of doors here, ten years ago. I planted Golden Chasselas. I have now ten or fifteen vines of it in my garden. I have fruited it six years. In planting it, I profited by the presence of a high fence for protection. I have the Black Prince and Rulander also, which ripen as well away from the fence. I have taken from the Golden Chasselas from fifteen to twenty-five pounds per vine. I have fruited the Black Prince and the Black Hamburg three years. It is as easy to grow them as the Concord, and easier than the Delaware. The Black-Prince vines have fifteen to twenty bunches each upon them; and I have vines of the Black Hamburg that have forty bunches on. In preparing the soil, I trench three feet deep and manure highly. The garden is protected by the house and fence; but I think

the fruit ripens better on vines seventy feet from the house, than nearer to it. I cut back the vines in the fall as far as I choose, and lay them down, and cover four to six inches deep with soil. I have not had them injured when thus buried. The ground on which these grapes are produced is no better nor richer than that on which the native sorts are planted. I believe we can grow these exotic grapes profitably in this State out of doors, when protected. I have the White Malmaison (?) and the White Cluster; also the German grape Rulander. Another gardener in my neighborhood is growing these grapes successfully.

———. — The Black Muscat is successfully grown out of doors at Hannibal this year.

President. — I am greatly interested and gratified at this account of success here with exotic grapes; but it will hardly be safe to conclude, that they will flourish with equal success throughout Missouri. The Society will take up and briefly discuss varieties of

PEARS.

CLAPP'S FAVORITE.

Barry. — We have not had it in bearing on our own grounds, but I have watched it closely. Mr. Clapp's crop was marketed this year the 20th of August. It is a remarkably fine fruit, full of juice, sound at the core, not of the highest quality, not very vinous; but the flavor is pleasant. It is a first-class pear.

Smith, of Syracuse, N.Y. — It is first-rate, because it is sweet and rich.

Elliott, of Ohio. — I fruited it this year. It is a week earlier than the Bartlett, and one of the best pears.

President. — Mr. Clapp has one hundred trees of it. It is the largest, handsome, early pear we have. It is productive, and lacks nothing to make it a first-class pear. The habit of the tree is excellent. It is hardier than the Bartlett.

PARRY, of N. J. — I have fruited it two seasons. It ripens the 15th of August with us, — two weeks earlier than the Bartlett. It gives great satisfaction.

EDMUNDS.

BARRY. — It is an excellent fruit; not handsome in shape, but a large pear, with a long stem, and first as to quality. It grows finely on the quince. It is a delicate straw color when ripe.

PRESIDENT. — I think highly of it.

DOWNING. — It is a pear of first quality with me.

JULIEN.

PRESIDENT. — It is old, and was discarded years ago for better varieties; yet it is a tolerably good early fruit.

HOWELL.

Good at Rochester; one of the three best in the West. Good in Ohio, Keokuk, Iowa, Boston, and Southern Illinois, and a fine market pear.

BEURRE SUPERFIN.

BARRY. — It is generally a very fine pear.

STERLING.

PRESIDENT. — This is a handsome, early, red-cheeked pear, and a good market fruit of medium quality. It is a good tree.

BEURRE DIEL.

PRESIDENT. — Cracks around Boston. A fine pear, but cracks badly in Illinois and Southern Wisconsin. Does well in St. Louis Co., Mo.

BARRY. — Does it crack every year? All pears crack occasionally.

Dr. Warder. — Mine have cracked three years out of four. It drops its foliage, which is worse still.

President. — It sheds its foliage and cracks uniformly with me.

Heaver — It is one of the best pears with me.

Douglass, Waukegan, Ill. — It has proved a failure on the quince. Sheds its foliage with me.

Hoag. — It sheds its foliage at Lockport, N.Y.

BEURRE D'ANJOU.

One of the best at St. Louis; also at Alton; one of the best bearers at Syracuse; has healthy foliage and is fine at Geneva; good at Waukegan.

President. — It is my great favorite, out of twenty-five hundred bearing trees; for it was well known that I introduced it from Europe. My crop of it is one hundred bushels per year, and every bushel is engaged beforehand. It is a profitable market fruit. It bears abundantly and succeeds admirably on pear stocks. It is not very late in coming into bearing. Every pear is a good one. It will keep until December.

Elliott. — I have fruited it three years from planting.

SHELDON.

Hooker. — It is one of the best pears in Western New York.

Bronson, of Geneva, N.Y. — It is a No. 1 pear with us.

President — No man can say aught else of it, I trust.

Robert Manning, of Mass. — It is first-rate with us.

BUERRE CLAIRGEAU.

Barry. — It is a handsome, productive fruit.

President. — It is handsome; sometimes very good, and sometimes quite indifferent as to quality. But it is beautiful, and sells well.

TYSON.

Dr. Warder. — It does well in the West. It is a good tree; bears early; good fruit; delicious; hangs on the tree well. Because of want of size, it is not so valuable as a market variety as it deserves to be.

Husmann. — It is nearly as good as the Seckel, and very productive.

Dr. Warder. — It comes in bearing early enough.

President. — The Tyson is one of the very latest in coming into bearing with us.

Coleman. — It is late in bearing with us, but it is a valuable fruit.

Dr. Claggett. — It produces the best pears of its season.

Hoag. — It comes in bearing in about ten years, on pear stocks, with us. It is an excellent fruit.

Williams. — Doyenné d'Ete, best, early, handsome, productive, and good; Osbands Summer, very flourishing, good bearer and grower, and better than Doyenné d'Eté; Tyson, grows well, and hangs on till picked, quality fine, not an early bearer; Beurré Clairgeau, seems inclined to the same fault; Glout Morceau, Flemish Beauty, and Beurré Diel, ditto; Lawrence gives the best satisfaction, holds its leaves till fruit is fully mature; Howell also does well, so far.

ONONDAGA.

Fine pear in Ohio; splendid at Hermann, Mo.; good market pear at Cincinnati, Ohio; one of the best market pears at Boston; not to be left out in a collection of twelve varieties anywhere; in North Illinois ripens in November and December.

BEURRE EASTER.

Dr. Hull. — No. 1 at Alton, Ill.

Barry. — It requires thinning and high cultivation, and is one of the best.

President. — I have tried it thirty years, and cannot succeed with it. Mr. Barry is correct concerning it, with his soil and culture.

Hooker. — In the West, it promises to be so irregular that I fear that it will have to be discarded.

Flagg, of Alton, Ill. — Does not latitude have some effect upon it? It may succeed with a longer season.

Dr. Hull. — I am root-pruning it, and it does well.

LAWRENCE.

Good and fine, generally.

WINTER NELIS.

Best early winter pear at St. Louis; an early bearer; a fall pear at Alton; keeps into January with Coleman, of St. Louis; has been kept till April at Keokuk, Iowa; at Hannibal it does not over-bear, but fails to ripen occasionally; is equal to the Lawrence with Robert Manning, of Massachusetts.

FLEMISH BEAUTY.

President. — It cracks badly in Massachusetts; rots at the core in Alton; is fine in Iowa; fine at Cincinnati; one of the very best at Syracuse, but should be picked early.

Earle. — In South Illinois it loses its foliage so early in the season, that it does not mature the crop.

Bryant, Princeton, Ill. — It blights badly in North Illinois.

Nelson, of Fort Wayne, Ind. — It is valuable in Northern Indiana; our best market pear; grown on both sand and clay.

Brown, Villa Ridge, Ill. — It holds its foliage well with me.

Kauffman. — It is the best of all pears in Keokuk, Iowa; soil, clay.

Smith, Syracuse. — Mulch the trees early in the season, and the foliage will not drop.

BEURRE HARDY.

BARRY. — It is a fine pear of first quality, and a noble tree.

BEURRE BOSC.

HUSMANN. — The most valuable pear I have. [It was generally commended.]

VICAR OF WINKFIELD.

DR. CLAGGETT. — It is worthless with me.

HUSMANN. — Poor as a turnip.

HEAVER. — The best winter pear we have.

DR. WARDER. — It is an excellent baking pear, though not valuable for dessert.

DR. SYLVESTER. — It is good for cooking.

PRESIDENT. — It is a productive and profitable pear, of moderate quality; valuable for baking.

DIX.

PRESIDENT. — It does not come into bearing in thirty years, with me. It is a pear of fine quality, but it cracks badly. I present the Society, in this connection, the following list of pears, recommended for general cultivation in Massachusetts, by the Massachusetts Agricultural Club, in order of ripening: —

STANDARDS.

FIRST SERIES.

Bartlett.	Merriam.
Seckel.	Sheldon.
Urbaniste.	Beurré d' Anjou.

SECOND SERIES.

Brandywine.	Onondaga.
Doyenné Boussock.	Howell.
Beurré Bosc.	Lawrence.

THIRD SERIES.

Belle Lucrative.	Marie Louise.
Paradise d'Automne.	Beurré Clairgeau.
Buerré Superfin.	Vicar of Winkfield.

CHERRIES.

The subject of cherries was called up, and Mr. Elliott was asked to say something of

ELLIOTT'S FAVORITE.

ELLIOTT. — It is a good fruit; but the tree is disposed to overbear.

HEART CHERRIES.

DR. HULL. — These cherries do not succeed well in the West generally. I prepared my ground three or four feet deep. At Alton, the cherry is south of its natural limits, and makes an early growth; sheds its leaves. When the warm rains of autumn commence, they start the sap in circulation a second time. I try to keep my trees in a healthy, growing condition throughout the season.

LYONS. — My healthiest trees are on ground never disturbed. At Hannibal they do not stand more than two years.

DUNLAP. — The Early May, Late Kentish, and English Morello, are the only cherries that generally succeed in Illinois.

HUSMANN. — I have Heart Cherries on Mahaleb stock, planted on the poorest soil I have, that are hardy, healthy, and productive.

BRYANT. — If a poor soil is necessary to the health, hardiness, and productiveness of the Heart Cherries, we have not got a soil poor enough to enable us to succeed in their culture in Northern Illinois.

ELLIOTT. — Last year, the Illinois State Horticultural Society advised cultivators to work the sweet cherries low down on Morello roots. Such practice will be successful. I recommended it years ago. The result is, you get a low-headed, bushy-topped tree. I am thoroughly disposed to think the Louis Phillipe equal to the cherries named for Illinois. For canning purposes, it is first of all. The Plum Stone (?) Morello is not as good a cherry as the Louis Phillipe; but it is very good.

PRESENTATION.

At this point, Dr. Edwards, of St. Louis, appeared upon the stand, and, on behalf of the ladies of St. Louis, presented President Wilder with a beautiful laurel crown. The presentation speech was appropriate and eloquent.

President Wilder, with much emotion, accepted the crown, and expressed his gratitude to the ladies of St. Louis, in an appropriate and eloquent manner.

RESOLUTIONS.

THANKS.

Mr. Hooker introduced the following, which was unanimously adopted :

Resolved, That the thanks of this Society be cordially returned to the Missouri Horicultural Society, to the citizens of St. Louis, and to the Press of the city ; for the excellent arrangements, hospitable reception, and the complete reports of our meetings which have been furnished for the Society.

PRIVATE AND PUBLIC INTERESTS.

Mr. Requia, N.Y., moved that, hereafter, at sessions of the Society, no circulars, or advertisements of books, or magazines, or other matters of private business, shall be permitted in the halls of the Society. He said that the tables above were crowded with placards, handbills, etc., of this kind ; and it had become a nuisance which should be prevented.

Mr. Dunlap, Ill., saw no reason for excluding pomological business matters from the Society's meetings. The circulars etc., thus disseminated, related to the matters which brought them together, and were of general interest. He thought the more the better.

Mr. Smith, New York, held the resolution to be eminently proper; the flood of these private advertisements, intruded everywhere, was not in keeping with the character of the Society.

Messrs. Barry and Knox, and many others, spoke to the resolution, their remarks coinciding with Mr. Smith, but without a strenuous desire for the passing of the resolution, believing that its introduction alone, would exhibit a point perhaps too much disregarded, they permitted the resolution to be tabled.

J. D. G. Nelson, of Indiana, offered the following preamble and resolution, which were adopted: —

Whereas, The time left by this Convention for the discussion of the merits of the apple is entirely inadequate to do justice to this great staple, and most important of all fruit, therefore,

Resolved, That growers of that fruit be requested to communicate with the General Fruit Committee in regard to the value and adoption of different varieties to the different soils and climates, as well as diseases of fruit and tree; that said committee may communicate the same to this Society, at such time and in such manner as it may deem expedient.

Society adjourned *sine die*.

REPORTS OF COMMITTEES ON FRUITS EXHIBITED AT THE ST. LOUIS MEETING.

By Mr. Charles Downing, of New York, as Chairman of Committee, made the following report: —

PEARS.

The Committee on Pears report a contribution of 725 dishes, as follows: —

From Hon. Marshall P. Wilder, Dorchester, Mass., President of the Society, 112 varieties, including fine specimens of Beurré d'Anjou, Merriam, Brandywine, Doyenné Boussock, Howell, Lawrence, Beurré Bosc, Paradise d'Automne, Gen. Totleben, Beurré Superfin, Sheldon, Conseiller de la Cour, Belle Lucrative, Emile d'Heyst.

From F. & L. Clapp, Dorchester, Mass., fine specimens of Clapp's Favorite.

From Ellwanger and Barry, Rochester, N.Y., 50 varieties including fine Beurré d'Anjou, De Tongres, Howell, Doyenné Boussock, Beurré Clairgeau, Bartlett, Tyson, Seckel, Beurré Bosc, Beurré Hardy, Edmunds, Lawrence, Beurré Gris d'Hiver, Sheldon, Josephine de Malines.

From H. Claggett & Sons, St. Louis, 18 varieties; Flemish Beauty, Seckel, and Beurré d'Anjou.

From F. Braches, 16 varieties.

From W. W. Scarborough and George Hoadley, Cincinnati, a large collection of pears; no list furnished.

From George Husmann, Hermann, Mo., 40 varieties, including fine White Doyenné, Seckel, Onondaga, Beurré Bosc.

From Bayles & Brother, Carondelet, Mo., 6 varieties; very good White Doyenné, Seckel, and others.

Augustus Starr, 23 varieties.

H. J. Hyde, Monticello, 9 varieties; fine Lawrence, Seckel, etc.

J. Davis, Godfrey, Ill., 14 varieties.

H. N. Kendall, Upper Alton, Ill., 7 varieties, including remarkably fine Duchess d'Angoulême, and Sheldon.

Fruit-Growers' Association, of Southern Illinois, 30 varieties, among which are fine Bartlett, Howell, White Doyenné, Glout Morceau, Beurré d'Anjou, Stevens' Genesee, Duchess d'Angoulême, Flemish Beauty, Onondaga, Sheldon, Seckel, Beurré Superfin, Beurré Diel, Buffum, Belle Lucrative.

R. Berry & Co., St. Louis, Mo., 30 varieties.

E. R. Mason & Son, St. Louis County, 20 varieties, including very fine Howell and Beurré Superfin.

E. F. Babcock, St. Clair Nursery, Ill., 9 varieties.

From Vineland, fine Bartletts, and 6 other varieties.

D. Williams, Alton, Ill., 3 varieties.

A. G. Humphrey, Galesburg, Ill., 2 varieties.

T. R. Allen, 2 varieties.

Dr. Carpenter, St. Louis, 2 varieties.

Dr. Peebles, Kirkwood, Mo., 4 varieties.

From R. Manning, Salem, Mass., Endicott pears from the tree planted by Gov. Endicott, soon after A. D. 1628.

Robert Douglass, Waukegan, Ill., 35 varieties.

Bunker Hill Horticultural Society, Ill., 30 varieties; fine Duchess d' Angoulême, Howell, Flemish Beauty, Seckel, Belle Lucrative, etc.

St. Louis Park of Fruits, 10 varieties.

George O. Hilton, Keokuk, Iowa, 21 varieties, including Glout Morceau, Flemish Beauty, Lawrence, Sheldon.

Dr. Edwards, Kirkwood, Mo., 1 variety.

J. S. Dunham, Kirkwood, Mo., 1 variety.

Besides the above, from fifteen to twenty lots were placed upon the table; but the contributors having neglected to affix their names or give lists, the Committee are unable to give a more particular report of them.

Though many of the specimens were large and fine, some of which we have endeavored to particularize, a large proportion give evidence of having suffered in the East from excess of rain, and in the West from the severe drought.

Your Committee are pleased to observe that most of those varieties exhibited from Western and especially South-western orchards, fully sustain, in size and appearance, their Eastern reputation. Among those found universally fine, may be named Bartlett, Howell, Sheldon, Doyenné Boussock, Lawrence, Beurré Superfin.

The Committee also note the following plums: —

German prunes, from F. Fine.

George Husmann, Hermann, Mo., Louisa plum — an improved variety of the native plum.

R. Berry & Co., St. Louis County, Duane's purple plums.

L. Crosby & Sons, O'Fallon, St. Clair County, Ill., 2 varieties of handsome plums.

George Todd, St. Louis, 2 varieties of handsome plums.

One variety of plums, from an unknown contributor.

John Fisher, Batavia, N.Y., a fine dish of nectarines.

E. Williams, Mont Clair, N.J., Kittatinny blackberries.

Mr. Lum, Sandusky, Ohio, a box of autumn black raspberries.

Specimens of Spanish chestnuts and figs, from unknown contributors.

Dr. E. S. Hull, Alton, Ill., a beautiful pyramid of apples, peaches, pears, and grapes, embracing fine specimens of all these fruits.

H. Claggett, of St. Louis County, Mo., exhibits the following varieties of pears: — Bartlett, Louise Bonne de Jersey, Seckel, Flemish Beauty, Howell, Beurré d'Anjou, Beurré Diel, Onondaga, Kingsessing, Duchess d'Angoulême, White Doyenné, Belle et Bon, Buffum. One variety, name not known.

Winter Nelis, and other received as such, but appears to differ.

Two plates marked Bartletts, the one much greener than the other. Annually ripens two or three weeks later than the other. In other respects is similar to the Bartlett in tree and fruit, except the wood has a darker color and the leaves a deeper green. It was received from the nursery as Barlot. It is a distinct variety.

By Mr. Parry, of Committee on

PEACHES.

Display remarkably fine — 212 plates in all.

Gustavus Paul, Clifty Creek, St. Louis County, Mo., several varieties of peaches — some of them seedlings for a name.

B. W. Davis, Turkey Hill, Ill., 5 varieties.

Wm. Harris, 3 varieties.

Wm. Brown, Crawford's Late.

Anapias Rice, 6 varieties.

Geo. Husmann, Hermann, Mo., Ward's Late Free, Brevoort's Morris, Late Admirable, President, Columbia, Morris White, Lemon Cling, Royal George, Favorite, Old Mixon Free, Blood Cling, Seedling of Columbia, La Grange, Craw-

ford's Late — 14 varieties in all, of which the Late Admirable were worthy of special mention.

Bayles & Bro., Carondelet, basket of fine Newington Cling.

A. Bainbridge, De Soto, Mo., basket of fine Late Crawford.

F. Fine, of Carondelet, Mo., 6 varieties, including Old Mixon Free, Crawford's Late.

R. W. Ferguson, Jefferson County, Mo., 2 dishes without name.

W. Shelton, Jefferson County, fine dishes of Crawford's Late and Morris White.

S. B. Johnson, Alton, Ill., fine Old Mixon Cling, several plates.

A. S. Barry, Alton, Ill., 1 dish Cling, name not given.

Mrs. Dr. Hull, of Alton, a collection of splendid peaches, among other fruits shown in a large pyramid.

J. W. Fenton, South Pass, Ill., fine Crawford's Late and Switzerland.

E. O. Freeman, Cobden, Ill., Smock Free, and other varieties.

J. Davis, Godfrey, Ill., Stump the World, Crawford's Late, and Late Admirable.

Parker, Russell & Co., St. Louis, Crawford's Late.

E. F. Babcock, 4 varieties peaches.

J. B. Orange, Edwards County, Ill., 1 dish peaches.

R. Berry & Co., St. Louis County, 9 dishes of fine specimens, including Crawford's Late — very large.

D. W. Morse, Vineland, Mo., Crawford's Late and La Grange.

J. W. Wyatt, Chamois, Mo., 17 dishes of fine peaches, including superb Old Mixon Free.

D. Williams, Alton, Ill., 2 plates peaches, Crawford's Late.

Valentine Gerber, St. Louis, 4 plates Crawford's Late — fine specimens.

William Matthews, Kirkwood, 1 plate peaches.

Dr. Peebles, Poplar Grove, splendid Crawford's Late — large dish.

Wm. Camp, Kirkwood, fine Crawford's Late, and some other varieties.

Thos. H. Oliver, Rock Hill, Mo., Crawford's Late — 2 plates.

John Fisher, Batavia, N.Y., a superb dish of nectarines.

Another dish of nectarines from an unknown party.

S. Wright, Jefferson County, Mo., 5 dishes peaches, Ward's Late Free, very fine.

S. W. Grey, Sulphur Springs, 7 dishes of 7 varieties of peaches; good specimens, and correctly named.

Park of Fruits, several dishes of fine peaches, including Heath Cling, Druid Hill, and Royal Kensington.

The Committee found several contributions on the table without the names of the contributors, and many without names of sorts.

By Mr. Downing, of Committee on New Native Seedling Fruits: —

APPLES.

Warfield, from Suel Foster, Muscatine; already named and introduced; good cooking and market; tree a good grower and bearer, and hardy.

Rasche, from Geo. Husmann; originated by W. Rasche; keeps till January; tree a strong grower, and productive and hardy.

Teubner's Golden — small golden yellow; handsome; scarcely good; originated at Hermann; a great bearer; hardy; fruit of uniform size, and sells well.

Teubner's Cider Apple — small yellow-red; said to be very valuable for cider; hardy, and a great bearer.

Seedling peach, from Columbia; raised by George Husmann; larger than Columbia; a week later; much same exterior color as the parent.

Louisa plum, from Geo. Husmann; a native plum, similar in size and appearance to the cherry; of good quality; said to be exempt from attacks of curculio.

Seedling apple, from L. D. Votaw, of Eureka, St. Louis County; somewhat resembling in appearance the Newtown

Pippin; ripe in September; scarcely good; tree a poor bearer; unworthy of cultivation.

Seedling peach, from Gustavus Pauls, near Eureka; a seedling from blood peach.

Seedling peach, also from Mr. Pauls; cling; resembles Newington Cling.

Also from Mr. Pauls, two varieties seedling pears, small size; unworthy of cultivation.

Also from Mr. Pauls, a seedling apple of handsome appearance, good size, and said to be a long keeper; unripe.

By Mr. Lyon, of Michigan,

REPORT OF THE COMMITTE ON APPLES.

To the President of the American Pomological Society:

Sir: The Committee on Apples shown at this Exhibition, report, that they have endeavored to discharge the duty imposed upon them, but have experienced difficulties in so doing, among which are the following: —

Owing, apparently, to the unexpectedly large amount of fruits offered, many of the collections are imperfectly arranged, and, in some instances, portions of them have not been displayed at all.

A large number of the collections were without lists of varieties, and a few were without the name of the exhibiter, rendering it impossible for your Committee to do any thing further than report the number of varieties.

A large number of collections were shown without names, but with a request that they should be named — a request, which, if properly complied with, would have absorbed more time than your Committee had at their disposal.

It is, however, obvious to your Committte that very great confusion of nomenclature exists among the growers of fruit in the region represented, which would require for its elucidation repeated exhibitions, and the continued efforts, both at such exhibitions and at home, among the producers, of thorough and pains-taking pomologists.

Your Committee also find here, as elsewhere, such modifications of the characteristics of even well-known fruits, the result apparently of the influence of soil or climate, or both, as to create doubts in many cases of the identity of varieties, and to greatly embarrass them in their examinations.

With these allusions to some of the difficulties with which they have been called to contend, and premising that from the crowded state of the tables, your Committee may have overlooked some collections, or failed properly to distinguish others, the following list of collections is submitted: —

Ellwanger & Barry, Rochester, N.Y., 2 varieties of apples, Maiden's Blush and Duchess of Oldenburgh.

Gustavus Pauls, Clifty Creek, Mo., 25 varieties without names, but including several standard varieties.

William Harris, 6 varieties.

A member, Pike County, Mo., 2 varieties.

Wm. Muir, 28 varieties, without list; some varieties not true to name.

L. D. Votaw, 15 varieties, unnamed.

J. A. Warder, Ohio, 2 varieties, among which we observe Western Beauty.

Nicholas Green, Gasconade County, Mo., 4 varieties seedlings.

Nicholas Bensing, 14 varieties, very fine.

Geo. Husmann, 49 varieties, beautifully grown, and embracing most of the standard varieties.

Bayless & Brother, Carondelet, Mo., 9 varieties.

A member, Florissant Valley, Mo., 1 variety, labelled Wild Crab; Committee believe it to be an ordinary seedling from our common apple (Pyrus Malus), of no apparent value.

Joseph C. Dickinson, Kansas City, Mo., 15 varieties, very well grown.

St. Louis Park, 10 varieties, large, and very fair.

Bunker Hill, Ill., 87 varieties; fruit very fair; a few misnamed or duplicated.

Central Iowa, collection said to be 107 varieties, many of them very fine.

T. R. Allen, 28 varieties, very good, and correctly named.

Henry T. Mudd, Kirkwood, Mo., 47 varieties, well grown, and generally true to name.

I. D. G. Nelson, Fort Wayne, Ind., 13 varieties, for identification.

J. E. Starr, Commerce Ill., 25 varieties.

Thos. J. Barnsback, 7 varieties.

J. Utt, 20 varieties.

E. B. Barker, 33 varieties.

J. B. Laughlin, Page County, Iowa, 36 varieties.

T. McWhorter, Mercer County, Ill., one hundred and fifty varieties.

John Edgerton, Coal Creek, Iowa, small lot partially named and not arranged.

Suel Foster, Muscatine, Iowa, 30 varieties.

Charles Buckley, Hannibal, Mo., 8 varieties for name.

By Mr. Campbell, of Ohio: —

REPORT OF THE COMMITTEE ON GRAPES.

J. Knox, Pittsburg, Pa., Chairman.
George Husmann, Hermann, Mo.
Geo. W. Campbell, Delaware, Ohio, Secretary.

Bayles & Bro., Carondelet, Mo., Concord and Norton's Virginia, very fine specimens.

J. M. Jordan, St. Louis, two canes Concord, heavily-laden with very fine bunches, large berries.

Plate of Delaware, beautiful and well grown.

John T. Walter, St. Louis, Catawba, Taylor's Bullet, Concord.

John Dyckman, Hannibal, Mo., two splendid bunches Concord.

J. B. Laughlin, Page County, Iowa, Concord and Delaware.

Dr. Hull, Alton, Ill., good specimens of Concord, Catawba, very fine, well-ripened Delawares; also, Fair Diana, Herbemont, and Norton's Virginia; also, a beautiful pyramid of grapes, apples, peaches and pears.

J. E. Starr, Alton, Ill., Rogers' Hybrids, Nos. 1, 2, 3, 5, 9, 13, 33, Isabella, Union Village, Concord, Delaware, Catawba.

A. & F. Starr, Alton, Ill., Catawba, Concord, Delaware, Creveling, Herbemont, very handsome cane of Delawares.

H. J. Hyde, Monticello, Ill., six plates very good Catawba.

Parker, Russell & Co., St. Louis, Delaware and Concord, very fine specimens Norton's Virginia, fair.

Valentine Gerber, box of fine Concord, nicely packed.

A. H. Dalton, Chicago, Ill., Clinton, Diana, Isabella, Delaware.

Geo. W. Campbell, Delaware, Ohio, good specimens of Delaware; also Rebecca, Jonas Underhill's Seedlings, Rogers's Hybrids, Nos. 2, 9, 19; also, seedling Delaware, small bunch and berry, considered by Mr. Husmann as promising for wine.

H. S. Christian, Jefferson County, Mo., very fine specimens of Concord and Delaware and Norton's Virginia.

H. C. Christian, Victoria, Mo., very fine Delaware.

Henry T. Mudd, St. Louis, very fine display of Concord, Norton's Virginia, on canes; also, fine Herbemonts, good Norton's Virginia, Delaware, Rebecca, Diana, Cunningham, Concord, Creveling, and North Carolina Seedling.

Dr. Peebles, Concord and Catawba.

T. R. Allen, Allenton, Mo., Concord and Catawba.

George H. Gill, of Kirkwood, fine display of Concord, Delaware, Clinton, Herbemont, Creveling, Iona, Maxatawny, Northern Muscadine, Dracut Amber, Diana, Isabella, and Rebecca.

From Bunker Hill Agricultural Society, Concord, North Carolina, Taylor, Clinton, and Norton's Virginia, fine specimens.

Madison Young, Des Moines, Iowa, Clinton.

D. D. Skinner, Concord.

Carpenter, Des Moines, Iowa, large bunch of Palestine grapes.

F. Bennett, Keokuk, Iowa, 9 plates very fine Concord.

T. D. Jewett, St. Louis, fine display of foreign varieties grown in open air; Golden Chasselas, Early White, Malvasia, Black Hamburg, Black Prince, Rulander; also, of natives, Concord, Delaware, Iona, Diana, Rebecca and Clarence.

St. Louis Park of Fruit, Basket of Concord, poor quality; also, poor specimens of Norton's Virginia, Anna, Herbemont and Diana; fair specimens of Taylor, and one bunch of Catawba.

Gustavus Pauls, Clifty Creek, Mo., Catawba and Isabella.

John E. Mottier, Cincinnati, Ohio, fine Delaware and Ives' Seedling; also, specimens of Iona, Norton's Virginia, and Concord.

G. W. Skaats, Cincinnati, Ohio, Delaware, very fine, Ives' Seedling; good.

W. W. Scarborough and George Hoadly, Cincinnati, Ohio, Cuyahoga, Israella, Rogers's Hybrids Nos. 1 and 3.

J. M. McCullough, Cincinnati, Ohio, fine display, twenty plates Ives' Seedling.

W. E. Mears, Milford, Ohio, three plates Ives' Seedling; good.

H. E. Hooker, Rochester, N.Y., Delaware, Adirondack, remarkably fine.

Hudson E. Bridge, Glendale, Mo., 5 plates Concord, very fine, 4 plates Delaware, very good; Herbemont, small, but well ripened; Iona; also, fine display of foreign varieties, including Black Hamburg, Golden Hamburg, and Black Prince.

Poeschel & Scherer, Hermann, Mo., 6 plates Concord; fine.

Bluffton, Wine Co., Mo., Fine Herbemonts; very good Norton's Virginia; Concords, very good; Branch of Delaware, good; Ionas, very fair; Cunningham, fine bunches.

Henry Heuze, Hermann, Mo., Norton's Virginia, Catawba, Miner's Seedling, Delaware, 6 plates Concord, two plates Catawba; good.

Gert Goebel, St. Louis, Mo., Foreign; Mirantha, and Smyrna Raisin; white grape (unknown); and Red Elba, fine specimens.

H. N. Kendall, Upper Alton, Mo., Rose Chasselas, Golden Chasselas, Black Hamburg, one bunch very fine (wrongly named) Muscat of Alexandria.

John Fisher, Batavia, N.Y., very fine branch Muscat of Alexandria.

John L. Lathrop, Hannibal Mo., two bunches Rogers's Hybrid No. 1.

S. F. Taft, St. Louis, Mo., Rogers's Hybrid No. 4, Anna, Rebecca, Taylor's Bullet, Catawba, Isabella, Delaware, and Norton's Virginia.

By Wm. Muir: Diana, Taylor, Cape, Mary Ann, Creveling, Dorr, Delaware, Iden, Mead's Seedling, Waterloo, Norton's Virginia Seedling, Little Ozark, German Wine, Cynthiana, Blood's Black, Dracut Amber, Perkins, Shaker, Muscadine, Charter Oak, Marion Port, Hartford Prolific, Concord, Clinton, North Carolina Seedling, Catawba, Isabella, Franklin.

By Geo. Husmann, Hermann, Mo.; Herbemont, Wine Flower, Cynthiana, Halifax, Elsenburg, Arkansas, Delaware, Ozark, Seedling, Hartford Prolific, Dracut Amber, Israella, Catawba, Diana, Mary Ann, Big Ozark, Little Ozark, Marion Seedling, Clinton, Cassady, Louisiana, Iona, North Carolina Seedling, Creveling, Taylor, Alvey, Poeschel's Mammoth, Clara, Waterloo, Rebecca, Norton's Virginia, Martha, Cunningham, Rulander, Devereaux, Maxatawny, Concord, Rogers's 1, 3, 4, 5, 9, 12, 19. One cane each of Concord, Herbemont, Cunningham, and Norton's Virginia; 44 varieties named.

The above very large and interesting contribution from Mr. Husmann, is worthy of special commendation. Very fine specimens of Norton's Virginia, Cunningham, Herbemont, and Concord were also exhibited on the vines, with the foliage, showing the growth, habits and productiveness, of the several varieties.

The Committee found a few specimens not named, and also without the names of the exhibiters; consequently, they are unable to mention them in this report.

REPORTS OF STANDING COMMITTEES.

ON REVISION OF CATALOGUE.

The Committee on the Revision of Catalogue respectfully report, that, after the holding the last meeting at Rochester, in 1864, the Catalogue of Fruit was amended in accordance with all the reports of State Committees and local societies received at that meeting, and previous to the publication of the proceedings.

At the present time, the Committee has received reports form the State Committees of Massachusetts, Pennsylvania, Illinois and Kentucky. Several other States, as Ohio, Indiana, Missouri, Iowa, etc., have local societies, which have published lists of fruits, and refer to these. With the aid of all these, many important additions and amendments may be made in the next edition, to be issued with the Proceedings of this session.

The experience which has been gained since the last session, in relation to grape-culture, will enable the Committee to make some important additions to our Catalogue of Grapes. The same may also be said of some of the small fruits. Now that peace has been restored, and the fruit-growers of all societies are able to resume their accustomed communications with each other, it is hoped that the great work of making a National Catalogue of Fruits, will make rapid progress.

All of which is respectfully submitted,

(Signed) P. Barry,

For the Committee.

REPORT OF THE COMMITTEE ON NEW NATIVE FRUITS.

By Charles Downing, Chairman, Newburgh, N.Y.

The Committee on New Native Fruits, report the following as some of the best varieties brought to their notice since our last meeting: —

THE MARTIN APPLE.

Originated at South Salem, ——— County, Ohio. It was a seedling planted by James Wilson, and first fruited between 1815 and 1820, after which it was propagated by root-suckers. No trees have been grafted from it away from the farm upon which it grows. The original tree is said to be very productive, and has borne crops for nearly twenty-one years in succession, since the present owner has occupied the farm. It is thrifty and healthy, and always full of fruit; foliage large, branches upright.

The name was given because a little boy named Martin discovered its good qualities, and frequently stole the fruit from the original seedling tree.

DUZENBURY APPLE.

Specimens from Dr. James Fountain, Jefferson Valley, Westchester Co., N.Y., who informs me that it originated on the farm of Charles Duzenbury, of Phillipstown, Putnam Co., N.Y. Tree a vigorous grower, a good keeper, and retains its flavor well. Fruit of medium size, roundish conical; skin greenish yellow, shaded, and rather obscurely splashed with red nearly over the whole surface. Flesh whitish-yellow, crisp, tender, juicy, mild, subacid, excellent; somewhat of the New-England Seek-no-further flavor; ripe, December till April.

STYMUS.

A new fruit, introduced by Dr. Fountain, and originated on the farm of Jacob Stymus, Dobbs' Ferry, on the Hudson.

It came up by the side of an old Spitzenburgh apple-tree (the whole orchard being Spitzenburghs); growth rather more upright, but resembling it; a good bearer. Fruit medium or above; oblate, inclining to conic, skin yellowish, shaded, splashed and striped with light and dark crimson nearly over the whole surface, some of the splashes of purplish crimson. Flesh of fine texture, whitish, tender, juicy, with a mild, rich, subacid flavor, slightly aromatic; quality, *best;* ripe, October and November.

MOTE'S SWEET.

A new, beautiful white apple, raised from seed by L. S. Mote, West Milton, Ohio, to whom we are indebted for specimens, and who says the tree is hardy, of moderate growth, rather spreading and productive. Fruit large, roundish, oblate, slightly conic, angular; skin pale whitish-yellow with a tinge of red in the sun. Flesh yellowish, fine-grained, juicy, very tender, with a rich, sweet, honied flavor. Ripe, September.

DEMOCRAT, OR VARICK.

Received from George L. Conover, West Fayette, Seneca Co., N.Y., to whom I am in debted for specimens. Origin uncertain, but supposed to have originated in the vicinity of Trumansburgh, Tompkins Co., N.Y. Tree vigorous, upright, and productive. Fruit always fair; size medium, or above, roundish, conical, inclining to oblong. Skin pale whitish-yellow, rather faintly striped and splashed with light and dark crimson nearly over the whole surface. Flesh whitish, fine-grained, sometimes slightly stained next the skin, very tender, juicy, mild, pleasant subacid flavor; a fine dessert-fruit, ripening from December till March.

CREEK.

Received of Daniel Engle, Marietta, Pa., who says it is a native of Hellam Township, York Co., Pa., where it has been fruited to a considerable extent, and is highly prized on

account of its quality and extraordinary productiveness. It derives its name from Crenty Creek. Fruit medium, or below, oblate. Skin greenish-yellow, thinly shaded, and rather obscurely striped and splashed with light and dark red. Flesh white, fine-grained, very tender, juicy, mild, subacid; quality very good at least. Ripe, November.

HICKS APPLE, OR BUCKRAM.

Introduced by Isaac Hicks, of Westbury, North Hempstead, Long Island, N.Y., who found it in a hedge about the year 1853; and says it has proved the most productive, and largest very early sweet apple cultivated in that section; earlier than Sweet Bough, and more productive. Fruit large, roundish, or roundish-oblate. Skin pale greenish-yellow, considerably striped and splashed with crimson. Flesh whitish, tender, moderately juicy, with rich, sweet flavor, slightly aromatic. Ripe, August.

PARK.

Introduced by Wm. S. Carpenter, of Rye, Westchester Co., N.Y., who values it highly as an amateur and market fruit. It originated on the farm of Roger Park, town of Harrison, N.Y. The original tree is still standing, and about seventy-five years old. Tree thrifty, and quite upright in its growth, and bears large crops every other year. Fruit medium, roundish, inclining to conic, angular. Skin yellowish, shaded and rather obscurely splashed and striped with light and dark crimson nearly over the whole surface. Flesh yellowish, rather firm, moderately juicy, with a rich, mild, subacid flavor, slightly aromatic flavor; very good. Ripe, January to March.

FAMILY, OR M'LOUD'S FAMILY.

An excellent early apple of Southern origin, received from P. J. Berckmans, of Augusta, Ga. Mr. Berkmans says it is a beautiful grower, bears enormously, always regular, fruit smooth, ripening for six weeks; the most distinct foli-

age of any of our Southern apples. Fruit rather large, oblate, conical. Skin yellowish shaded, striped and splashed with dull red over two thirds its surface; flesh white, tender, juicy, with a very mild, pleasant, subacid flavor; quality "very good," or "best."

SLIGHT'S LADY APPLE.

A new seedling, raised by Edgar Slight, Fishkill Plains, Duchess Co., N.Y., from the Lady Apple, and like it in every respect, except that it is double the size, and the skin a a little more yellow and waxen, and comes into eating earlier in the season.

BRILL'S SEEDLING.

Raised by Francis Brill, Newark, New Jersey, and he values it highly for market and culinary purposes. Fruit large, oblong, conic, angular; skin yellow; flesh yellowish, tender, juicy, slightly subacid. Ripe, October, November.

CELESTIA.

Received specimens from L. S. Mote, West Milton, Ohio. One of his new seedlings which promises to be an acquisition. Fruit rather large, roundish, inclining to conic. Skin pale yellow. Flesh yellowish, fine-grained, crisp, very tender, juicy, with a rich, mild, subacid flavor, with considerable aroma; quality best. Ripe, September.

PINE CREEK SWEET.

Specimens of this fine sweet apple were sent us by John Hamilton, of Jersey Shore, Pa., and he writes us that it originated at Pine Creek, Jersey Shore, Clinton Co., Pa., where the original tree is still standing. Fruit large, roundish, conical. Skin pale whitish-yellow. Flesh white, crisp, very tender, juicy, with a very rich, honied flavor; quality very good, if not best. Ripe, October to November.

COCKLIN'S FAVORITE.

Originated with E. H. Cocklin, of Shepherdstown, Pa., who describes it as a very fine dessert fruit; keeps well, and continues in use from September till February. Tree a beautiful, upright grower, and very productive. Fruit rather small, roundish, oblate, inclining to conic; skin whitish, with a thin shade of crimson in the sun; flesh white, fine-grained, crisp, very tender, juicy, mild, pleasant, subacid; quality very good.

FLAKE'S FALL.

Received from James A. Nelson & Sons, of Indian Run, Mercer Co., Pa., and they inform me that it originated near that place, and is a very profitable sort for market; moderate, rather upright grower, great bearer, and a large, valuable variety for that section. Fruit large, oblate, inclining to conic, slightly angular; skin yellowish, shaded, striped, and splashed over the whole surface with light and dark crimson, almost purplish in the sun; flesh white, fine-grained, crisp, tender, moderately juicy, with a very pleasant, mild, subacid flavor, peculiarly aromatic; quality "very good," or "best;" ripe, September to November.

PEARS.

EDMUNDS.

Originated with Eliphalet Edmunds, of Brighton, near Rochester, N.Y., and promises to be one of the best of its season. Tree a very strong grower; fruit medium to large, somewhat irregular in form, and surface uneven, obtuse, pyriform, angular; skin yellow, with slight nettings of russet; stalk very long, set in a shallow cavity; flesh fine, whitish, juicy, melting, with a sweet, rich, peculiar flavor, somewhat like almond or walnut; quality very good or best; ripe, middle of September to middle of October.

MARY.

Not having seen the fruit of this pear, we give F. R. Elliott's description: "Raised by Christopher Wiegel, of Cleveland, Ohio, from seed of the Seckel. Tree upright, vigorous, an early and abundant bearer; fruit a little below medium in size; form generally globular, obtuse, pyriform, occasionally one-sided; skin rich, pale yellow, mostly overspread and dotted with bright, rich red, becoming deep next the calyx, and a little russet next the stem; flesh white, finely-granulated, almost buttery, juicy, sweet; very good; season before the Madelaine, or early to middle of July."

MARGARET.

Another of Christopher Wiegel's seedlings. "Its history the same as the Mary. Fruit medium size, oblong, ovate; color lemon-yellow ground, when fully ripe, mostly overspread with deep, dull red, small russet dots, and patches of russet; flesh white, finely-granulated, juicy, vinous, sweet, and free from astringency; season last of July and early August."

Other new kinds, such as Dr. Turner's, Dr. Shurtleff's new seedlings, Painter's seedling, Howard, Richardson's seedlings, Clapp's new seedlings, Hebe, etc., are spoken of as valuable.

REEDER'S SEEDLING.

Specimens of this new pear were sent us last fall by Dr. Henry Reeder, of Varick, Seneca Co., N.Y., and, judging from the fruit, would think it of superior quality. Mr. Reeder writes, that the tree is about twelve years old, and was raised from the seed of Winter Nelis, which tree grew near a Seckel, and is, no doubt, a cross of the two varieties. Tree healthy and vigorous, rather spreading in form, and an excellent bearer; fruit small to medium size, obovate, truncate; skin yellow, netted, and patched with light russet

nearly over the whole surface; flesh fine, juicy, melting, somewhat buttery, very sugary, sufficiently vinous, perfumed with musk, and slightly aromatic; quality best; ripe, November.

RUTTER.

An excellent late variety, raised from seed of Van Mons Leon le Clerc, by John Rutter, of West Chester, Chester Co., Pa. Tree a vigorous grower, an early and an abundant bearer; fruit medium size, obovate, obtuse, pyriform, angular; skin rough, greenish-yellow, often considerably sprinkled and netted with russet; flesh white, not very fine in texture, sufficiently juicy and melting, with a rich, sweet, vinous flavor, slightly aromatic; quality very good; ripe, October and first of November.

ELLIS.

A new pear, highly prized where known, and was raised by Mrs. Annie Ellis, of New Bedford, Mass., from seed of the Seckel. Tree a thrifty grower, very hardy, and an abundant bearer; fruit medium or rather large, obovate, pyriform, truncate; skin greenish yellow, considerably patched and netted with russet, and sometimes a shade of crimson in the sun; flesh yellowish-white, juicy, melting, with a rich, sweet flavor, slightly vinous, and a little aromatic; quality very good, or best; ripe October.

GOODALE,

Introduced by S. L. Goodale, who informs us that it was raised from the seed of McLaughlin pear, by Enoch Goodale, of Saco, Maine; of large size, excellent quality, regular bearer, and a very promising late variety. Tree hardy, vigorous, and upright in its growth when young, but spreading when it comes into bearing, and very productive. Fruit large, elongated, truncate, pyriform; skin light yellow, sometimes shaded with crimson and fawn in the sun, slightly net-

ted and patched with russet; flesh whitish, juicy, melting, a little gritty towards the core, with a rich, sweet, slightly-vinous, refreshing flavor, somewhat musky; quality very good, if not best; ripe November.

BRONX.

Specimens received from Prof. George Thurber, of New York, who writes us that it was raised by James R. Swain, of Bronxville, Westchester Co., N.Y., about the year 1850. An upright grower, inclined to pyramidal; an early, regular, and abundant bearer; fruit medium size, obovate, pyriform; skin greenish-yellow, partially netted and patched with russet; flesh whitish, juicy, melting, with a sweet, slightly-perfumed flavor; quality very good; ripe from the first to middle of September.

PLUMS.

FOOTE'S EARLY ORLEANS.

Grown from seed of Wilmot's Early Orleans, by Ashael Foote, of Williamstown, Mass. Tree hardy, much more vigorous than its parent, symmetrical, bears heavy crops, and almost free from rot; fruit medium size, roundish, inclining to oval; skin deep black, covered with a blue bloom; flesh greenish, moderately juicy, with a sweet, pleasant, vinous flavor; adheres to the pit; ripe from the first to the middle of August.

GRAPES.

There have been many new varieties brought forward since our last meeting; but so little is known of them by the Committee, that more time is required to decide as to their merits.

STRAWBERRIES.

Numerous kinds have been introduced, but they vary so much in different soils and localities, that it is difficult to de-

cide which is best for general use, and each locality will have to find out by actual experience which varieties succeed best in their section.

RASPBERRIES.

Many new varieties have been on trial: but the Clarke and Belle de Palluau have given the most general satisfaction. The Clarke is claimed to be hardy, and if it proves so, it will add to its value. Duhring, Naomi, and Mrs. Wood, are said to be valuable, and Chas. Arnold, of Paris, C.W., has raised some seedlings that are said to be of fine quality and hardy. There are also several new kinds of the Black Cap family that are highly praised, but not fully tested.

BLACKBERRIES.

Kittatinny and Wilson's Early are before the public as superior kinds, and so far as tested, are worthy of extensive trial. The Kittatinny being hardier and sweeter in flavor than New Rochelle, and equally as vigorous and productive. It is said that Wilson's Early is ten days earlier than New Rochelle, but is deficient of pollen, and should be planted in alternate rows, or two rows of Wilson and one of New Rochelle or Kittatinny, which makes it very productive.

REPORT OF THE COMMITTEE ON POMOLOGICAL RULES.

By Mr. Barry, Chairman.

1. No new seedling fruit shall be entitled to the recommendation of this Society until its qualities shall be ascertained by at least five years' experience in more than one locality, and which is not at least equal to any similar variety the first rank already known; or which, if only of second-rate flavor, is superior in vigor, hardiness, productiveness, or other important quality or characteristics.

2. No new fruit shall be considered as named, until it has been accurately described by some person or committee, known to be conversant with existing varieties, and such description shall have been published in at least one horticultural or agricultural journal, or some pomological work of acknowledged standard character.

3. The originator, or he who first makes known a new variety, shall be entitled to name it, and such name, if suitable, shall be adopted by the writer describing the fruit for the first time.

But if the name proposed is inappropriate, or does not come within the rules of nomenclature, the describer shall be at liberty to give a name.

When two persons have named or described a fruit, the name and description first published, if according to the rules, shall have the priority.

4. In giving names to new varieties, all harsh, vulgar, or inelegant names, such as "Sheepsnose," "Hogpen," etc., should be avoided, and no name should consist of more than two words, excepting only when the originator's name is added. Characteristic names, or those in some way descriptive of the qualities, origin, or habit of fruit or tree, shall be preferred. They may either be of intrinsic properties, as Golden Sweeting, Downer's Late, etc.; or of local origin, as Newtown Pippin, Hudson Gage; of the season of ripening, as Early Scarlet, Frost Gage; of the form and color, as Golden Drop, Blue Pearmain; or which commemorates a particular place or person, as Tippecanoe, La Grange, Baldwin, or any other titles which may be significantly applied.

5. The descriptions of new varieties of fruits shall embrace the following particulars: —

1st. An account of their origin.

2d. The fruit, its size, form, and exterior color, texture, and color of the flesh, flavor, and time of ripening, with the addition, on stone fruits, of the size of the stone, adherence or non-adherence of the flesh, form of the suture, and the hollow at the stem, and in kernel fruits, of the size of the

core and seeds, the length, position and insertion of the stalk, and form of the eye.

3d. The tree, its marked characters of growth, young and bearing wood, foliage and blossoms. In peaches, the form of leaf, glands, and size of blossoms. In strawberries, the character of the blossoms, whether staminate or pistillate. In grapes, the form of bunch or berry.

REPORTS OF STATE FRUIT COMMITTEES AND INDIVIDUALS.

MASSACHUSETTS.

APPLE.

Formerly the apple was the most reliable crop of fruit to the farmer, both for shipment and cider. But during the three or four years last past, many who had counted the barrels of apples by hundreds, found themselves without sufficient for family use, so devastating has been the destruction caused by the caterpillar and the canker-worm in many places on the seaboard, and in the vicinity of Boston.

This year (1866) the blossoms gave promise of an abundant crop; but owing to frost, or from some other cause, at the time of the setting of the fruit, the crop will again prove a failure.

The Benoni, which originated in this State, has deteriorated so much that few are planting this variety.

The same may be said of Cole's Quince.

The Fameuse, for its beauty and great bearing, is becoming quite a favorite.

The Lady's Sweeting proves a good bearer, and is always desirable.

Neither the Melon nor the Minister, sustain their former reputation.

The Northern Spy has succeeded better since the trees have matured.

The Washington does not prove so abundant a bearer as was hoped, but is equally as handsome as the Gravenstein.

The Gravenstein is a great favorite, and is one of the most profitable in the vicinity of a market.

The Hubbardston continues as desirable as ever.

The Baldwin, R. I. Greening, and Roxbury Russet, are our *standard* varieties.

NEW PEARS.

During the past four years, some new pears have been introduced which appear worthy of extensive trial, if not of general cultivation. Clapp's Favorite, which has been before the public for some years, proves all that its friends ever claimed for it, being large, handsome, fine quality, great bearer, and fine grower. Should be picked quite early, when hard; suffers very much in quality if left too late on the tree.

Dr. Shurtleff, of Brookline, Mass., has raised and fruited many seedling pears, among which are Gen. Banks, Gen. Grant, and President. These three have been very favorably received. The Gen. Grant is large, pyriform, fine-grained, sweet; Gen. Banks medium size, round form, with a long stem; color yellow, with red cheek; a little gritty at the core, but melting, juicy, and good flavor. The President is very large size and very handsome; quality nearly first-rate. These are September and October pears.

The Hovey (Dana's), though not a *very* new pear, demands a notice here. It has been growing in favor year by year, and is now acknowledged, wherever grown, to be a pear of the very highest excellence, and every way worthy of general cultivation. We have no better in its season, November and December.

The Ellis is another new pear. A seedling raised by Mrs. Ellis. Large size, pyriform; skin green, a little rough, dull green, yellow when mature, some russet, round stem and eye; flesh yellowish white, little coarse, but very juicy,

melting, with a brisk, vinous flavor; a very good variety, and more like Dix in texture, than any other pear. October.

The Tudor is a peculiar shaped russett pear, of nearly first quality; short stem, melting, juicy; worthy of a further trial. Said to be a seedling from the Fulton, which it resembles. September and October.

Two years ago, a pear was placed on our tables, which we have named the Wellington, for its originator. In size and shape it resembles the Beurré d' Anjou, but longer, with a short stem set in a slight cavity, calyx small; color yellow when ripe; flesh melting, fine-grained, with a peculiar "confectionery" like flavor, unlike that of any other pear. Time of ripening, last of October. Very hardy, and a good grower.

The Mt. Vernon, a seedling pear, raised by the late Samuel Walker, has a very peculiar cinnamon flavor. Though not of the very highest quality, still, we think it worthy a place in every collection by a single tree at least. It is large, and very handsome, considerable russet, with red on the exposed side, strong, fleshy stem, nearly melting. Time of ripening, October and November.

The Rogers is a new pear that promises well. It resembles the Washington in dots, marking, and flavor, but more the Louise Bonne de Jersey in shape and size, but superior to both in quality. Ripe last of September.

The Goodale pear, raised by Mr. Goodale, of Saco, Me., from the McLaughlin, is one of the most promising pears that has come to our notice for several years. The fruit is large and very handsome, having a bright red cheek on exposed specimens. In shape it resembles the Andrews, but more blunt at stem end and larger; quality very good; melting, fine-grained, and equal to Beurré d' Anjou. Tree very hardy. October.

The Augustus Dana, one of the many good pears raised by Francis Dana, has been repeatedly tested by us, and we

pronounce it a pear of high character. It has a thick, rough skin, but is melting, spicy, high flavor, and among the best of its season. October, November.

Several others of Mr. Dana's seedlings have been received with favor by all lovers of good fruit; the Excelsior, Shawmut, and others.

A pear raised by Mr. Painter, of West Haven, Conn., and named the Painter's Seedling, has pleased us much. In outline and general appearance very much like the Heathcot, but larger, fine grain, melting, pleasant, subacid, well worthy further trial. September.

POPULAR PEARS.

Of the well-known and popular sorts, we find the Howell, Lawrence, Marie Louise, Beurré d'Anjou, and Sheldon, have been constantly growing in favor, and are giving general satisfaction; and we do not hesitate to recommend them for general cultivation in Massachusetts. Doyenné du Comice may be added to the list, though the young wood is liable to be winter-killed to some extent.

Among the varieties that have fully sustained their reputation, are Swan's Orange, Bartlett, Abbott, Moore's Pound, Paradise d'Automne, Belle Lucrative, Beurré Bosc, Golden Beurré of Bilboa, Beurré Hardy, Beurré Superfin, Brandywine, Buffum, Conseiller de la Cour, Doyenné Boussock, Rostiezer, St. Michel-Archange, Seckel, Supreme de Quimper, Tyson, Urbaniste, — one of the very best, — Vicar of Winkfield, Winter Nelis. Any and all of these, we believe, may be safely and profitably planted. The Josephine de Malines is growing in favor; we recommend it for a more extensive trial.

OLD VARIETIES.

In looking over the list of pears, we are compelled to say of the Flemish Beauty, that it is losing favor, and the trees are being set off and worked over. The Glout Morceau, in

many localities, has disappointed the grower; the fruit blasts and drops off. Age does not seem to wholly remedy the difficulty. Louise Bonne de Jersey shows signs of failing in some locations, and its reputation must suffer in consequence. We do not advise planting this variety largely. Beurré Diel has not improved, but has rather become more difficult of culture. It is a variety that cannot be profitably planted. The Kirtland rots badly at the core, and we do not regard it as worthy a place in any collection. Easter Beurré is very difficult to raise, and should not be attempted, except, perhaps, a single tree, in favorable localities.

All of the above pears are first-rate in quality, but have defects that seriously affect their value for general cultivation. Stevens's Genesee is a poor pear, rots at the core, is never very good, and never was worth growing for any purpose.

GRAPES.

The interest in, and cultivation of, the grape is steadily increasing, and with encouraging results.

We cannot speak with assurance of the newer kinds, owing to our limited experience with them. The Adirondack has suffered considerably from the severity of the winter of 1865–6, in many instances the roots being killed. Its habits of growth are like the Isabella, being subject to mildew. Yet, we by no means despair of this fine, early variety. A favorable impression prevails in regard to the Iona, as vigorous, healthy, hardy, and excellent, though later than we could wish. The Israella has equal, and, perhaps, greater favor on account of its earliness. Francis Dana, of Roxbury, Mass., has raised two seedlings, which, in the quality of the fruit, are of decided merit. The one called Dana is a round, deep-red grape, "as free from pulp as the Delaware; not so sweet, but more spirited and vinous, and yet not an acid grape." The bunches and berries are of medium size. The other, called the Nonantum, is an oval, black berry, similar in appearance to the Isabella; bunches

rather small; entirely free from pulp, being quite remarkable in this respect; quality excellent. These varieties have not been tested except by Mr. Dana, and we can only speak of the quality of the fruit.

Many of the numbers of Rogers's hybrids have rather advanced in public esteem. No. 1 is probably too late for New England. No. 3 is nearly as early as the Delaware, of good quality, and promising well. No. 4 has the noble appearance of the Union Village, and is more hardy and certain. It is deservedly popular, though not as early as could be desired. No. 15, a remarkably vigorous vine, is productive where it has room, but it is not up to the standard in quality. No. 19 does not seem to be as desirable as No. 4. No. 41 resembles No. 4, and may prove quite desirable. In speaking of these hybrids, we have in mind their prominent characteristics; viz., hardiness, vigor, productiveness, and fine appearance.

Allen's hybrid has suffered during the winter of 1865–6. It is not as early as could be desired for New England.

Clinton is not regarded with favor, on account of its quality; while the Catawba, Isabella, Rebecca, Union Village, and, to some degree, the Diana, are neglected on account of their uncertainty. Of the well-tried kinds, Concord, Creveling, Delaware, and Hartford maintain their good position. The Creveling may be said to have advanced in favor.

STRAWBERRIES.

In strawberry culture, we make Hovey's Seedling the standard variety by which we test other varieties.

Brighton Pine fully sustains its previous good reputation.

Boston Pine — as good as ever.

Hovey's Seedling — as fine as formerly, and the standard sort.

Jenny Lind — not extensively raised, but, when grown, is as satisfactory as formerly.

La Constante — the most beautiful in form and color; the finest foreign variety ever introduced.

Scott's Seedling is undoubtedly a fine variety, but is not extensively cultivated.

Triomphe de Gand — large and handsome, but not of first quality.

Wilson's Albany — poor quality, poor color, very acid, but good bearer.

Buffalo Seedling is identical with McAvoy's Superior, which was discarded by us years ago.

Frogmore Late Pine is a new variety that promises well; large size, and quite late.

Russell's Prolific is a fair bearer, but is of poor quality. The berry is wrinkled and ill-shapen; not worthy of cultivation.

The Agriculturist is a strong grower, a good bearer, tolerable flavor when nearly ripe, and of a scarlet color; and when fully ripe, of a dark, dirty color, and of decidedly poor flavor.

French's Seedling is a scarlet, soft berry, of poor flavor, lacking nearly all the qualities that go to make up a good strawberry.

Lennig's White, Monitor, Brooklyn Scarlet, Green Prolific, Deptford White, Progress, Lucinda, Perfection, Exposition du Chalons, are all poor varieties.

RASPBERRIES.

The following are the best varieties of this fruit: — Knevet's Giant, Brincklé's Orange, Franconia, Hornet.

CURRANTS.

The varieties most esteemed are Red and White Dutch, La Versaillaise, Fertile d'Angers, May's Victoria, Dana's White, White Grape, Gondouin White.

EBEN WIGHT,
J. F. C. HYDE,
W. C. STRONG,
} *Committee.*

MASSACHUSETTS.

HAVERHILL, Mass., 1867.

We are situated in the extreme north-eastern portion of Massachusetts, on the Merrimac River, in latitude forty-two degrees, forty minutes, rather a cold region for fruit-culture, especially for several years past, during which we have had such unprecedented severe winters, when the mercury has fallen to twenty-five degrees below zero, killing peach-trees, and severely injuring other species. When I first came to Haverhill, twenty-five years ago, regular and abundant crops of very fine, large, yellow-meated peaches were raised throughout this vicinity; but I think, that of the last twelve or fifteen years, there have been not more than two or three years in which there have been any peaches raised here. The present year, I think, has been the most productive of peaches of any during twenty years past; and we hope we shall have a series of mild winters, that will be favorable to the production of this delicious fruit. The main reliance of New England for generations, as regards fruit, has been upon the apple crop; but for several years past the crop has been decreasing, both in quantity and quality, until it is hardly considered a desirable fruit to cultivate by our fruit-growers, who are turning their attention to other species. Whether the decline of the apple with us is to be attributed to a change of climate, in consequence of the severity of our winters, or to an exhaustion of certain requisite elements in the soil, is a question upon which pomologists here are divided in opinion. I have no doubt, however, that the failure is to be attributed to the latter cause, and that the remedy will be found in the *application of phosphates*. Apples and potatoes always succeed best on virgin soil, or where they are the first crop succeeding the forest which has been cleared and *burned over*. The failure of the apple crop has served to turn the attention of our fruit-growers to the pear. It is

astonishing to one, to whom the fact is not familiar, to what extent the pear-tree is being planted in this State.

Pears succeed well and are profitable with us in all cases where *a generous culture is bestowed*. The old St. Michael, now known as the White Doyenné, for so many years the principal pear raised here, has utterly failed with us, so that it is impossible to raise a single fair specimen; and the Flemish Beauty, which has been a great favorite, is fast following in its footsteps. It cracks and cankers very badly with us. The only region I know of in New England where the Flemish Beauty is grown *in perfection*, is that surrounding Lake Winnipiscogee, in New Hampshire. Other varieties, as the Beurrè Diel, and others, are failing in the same way with us. I think the difficulty is in the soil, which is *being exhausted of some necessary element*. I have succeeded in escaping this canker and cracking better than many of my neighbors, by using special manures, such as charcoal dust, leached ashes, salt, and iron, the effect of which is seen in a deeper gloss upon the leaf, smoother bark, and fairer fruit.

There are some varieties that always do well in this vicinity, never cracking, of good flavor, good growers, and productive. If I were called upon to name twelve varieties that combined the greatest number of excellencies with the fewest defects, they would be Rostiezer, Dearborn's Seedling, Bartlett, Belle Lucrative, Louise Bonne de Jersey, Sheldon, Swan's Orange, Duchess, Beurré d' Anjou, Lawrence, Winter Nelis, Vicar of Winkfield.

Grape-culture is receiving much more attention in this section than formerly. The great desideratum with us is, to find a grape of *good quality* that will *ripen early*. The Delaware, undoubtedly, stands at the head of the list for open culture, although the Concord is more extensively raised; but the Delaware is much superior in quality, and ripens earlier. It also requires superior culture. The Concord will thrive the best of the two on poor fare. My opinion is, that neither the Iona or Israella will be found supe-

rior to the Delaware *for this section*. As a special manure for the grape, I think, next to ground bones, that pulverized slate is very good. Small fruits are cultivated with us pretty extensively. The best gooseberry is Downing's Seedling; the best currant the La Versaillaise; the best strawberries, Hovey's Seedling and Wilson's Albany.

DAVID BOYNTON.

CONNECTICUT.

HARTFORD, Conn., 1867.

I regret to say, that I can report nothing new in the way of Pomology from this section of country. Our apple crop, which is our staple, has been generally cut off for the past four years by the canker-worm. Our pears, native and foreign, have developed no new prominent features. Grapes, as a crop, were nearly a failure this season. Concord showed disease in leaf and berry. Rebecca and Adirondack failed in fruitage. Diana did moderately well, as usual. Iona and Israella were generally failures. Hartford Prolific, Creveling, and Delaware proved reliable and fruitful, in the relative order as named. Of other varieties, old and new, we can give no reliable information of value. Of seedling grapes we have, probably, our share; but none of them have had their characteristics fully developed. Some two or three are quite promising. Cherries and plums failures. The Cherry Currant, the La Versaillaise, and the White Grape are all productive and profitable; also Red and White Dutch. Nothing new in the way of raspberries. The Holcomb Blackberry sustains its character for positive hardiness and productiveness and general good qualities of plant and fruit. The Wilson and Triomphe de Gand are our leading strawberries for market; Wilson most productive; Triomphe de Gand brings the highest price. Agriculturist and Jucunda promise well. Peaches re-commenced bearing this year, and gave a fair crop, mostly seedlings.

D. S. DEWEY.

NEW JERSEY.

HAMMONTON, 1867.

I have nothing new to speak of as regards fruit in New Jersey, except to describe two new grapes of promise, under names of Conqueror and Challenge. They were grown from seed by Rev. Acher Moore, and supposed to be a cross between Concord and Royal Muscadine. The Conqueror has long, loose-shouldered bunches; berries medium, glossy black, with a bloom; flesh slightly pulpy, juicy, sweet. The Challenge has short, compact bunches, shouldered; large, round berries, pale red, with flesh slightly pulpy, juicy, very sweet.

WM. F. BASSETT.

NEW YORK.

Notes on fruits for market grown in Northern New York, latitude forty-four degrees forty minutes.

APPLES.

The following varieties are hardy and profitable: —

Summer. — Early Harvest, Red Astrachan, Sapson, Summer Rose, Benoni, American Summer Pearmain, Duchess of Oldenburg, and Tetofsky. *Autumn.* — Alexander, Champlain, Fall Pippin, Fameuse, St. Lawrence, Gravenstein, Hawley, Late Wine, Porter, Northern Sweet, and Brittle Sweet. *Winter.* — Hubbardston Nonsuch, Northern Spy, Bailey Sweet, Tolman's Sweeting, Yellow Bellefleur, Jonathan, Peck's Pleasant, Pomme Grise, Vandevere, Belmont, Dutch Mignonne, Tompkin's Co. King, Blue Pearmain; also the following to a limited extent, as the trees are more or less tender here: Esopus Spitzenburg, R. I. Greening, and Swaar. Apples in this section grow remarkably fair and are of high flavor, compared with those grown farther South and West. My winter apples are always ordered by private families in Saratoga, Troy, Albany, along the Hudson River, and New-York City.

PEARS.

The Flemish Beauty is the favorite pear for this section, and is more planted than all other kinds together, being as hardy as an apple, and bearing large crops. The Onondaga, Fulton, Beurré d' Anjou, Beurré d' Amalis, Beurré Hardy, White Doyenne, Beurré Goubault, and Winter Nelis, also succeed well.

PLUMS.

Green Gage, Imperial Gage, Washington, and Jefferson, succeed best of the table sorts; but for market, the Lombard, Sweet Blue, Blue Frost, and Damson, are the most profitable. They are all grown in this section from sprouts, and have this season produced a full crop.

I have this season purchased, and shipped to New York, seven hundred and fifty bushels of plums, all (with the exception of ten bushels of Egg and Green Gage) being Lombard and Frost plums, fetching from $5.00 to $9.00 per bushel.

The curculio abounds here, as in other sections, some years destroying our entire crop of plums and cherries, and also injuring pears and apples.

We do not succeed in getting a full crop of plums oftener than once in from two to five years.

CHERRIES

Do not succeed, and are not planted here.

RASPBERRIES.

All kinds succeed well with us, but are not profitable as a market berry.

STRAWBERRIES.

Wilson's Albany is the favorite for market. The Triomphe de Gand also does well.

GRAPES.

Adirondack. This variety has never failed during the last five years, since I have had it bearing in my grounds, to produce full crops of fruit, ripening with the Hartford. It is very prolific; quality best; vines good growers and healthy.

Delaware succeeds admirably and ripens well; vines healthy and vigorous.

Hartford Prolific always ripens a full crop; very vigorous and healthy; valuable as an early ripener.

Concord has not succeeded well with me; it is rather late and I may say I have never ripened a bunch fit to eat. It has, however, proved better with one of my neighbors, who lets it run wild.

Rebecca is rather late, but healthy, and ripens in favorable seasons.

Allen's Hybrid, rather late, and is subject to mildew.

Creveling. Specimen vines on my trellis have never produced a perfect bunch of fruit. I succeeded in getting a few bunches of good fruit from a layered vine this year, and I begin to have hopes of it.

Diana, Isabella, Maxatawny, Tokalon, and Union Village, ripen too late for us.

Israella ripened well a week later than Adirondack and Hartford.

Sherman ripens earlier than Hartford; does not fall; valuable for making wine, resembling Port, with addition of sugar.

Telegraph. I have fruited this the last two years, and find it early, and of good quality; does not drop.

Rogers' Hybrids. No. 1 does not ripen; 3, nearly as early as Hartford, and quality good, productive and vigorous; 4, very vigorous grower, good; 15, very vigorous grower, *very good*, ripens with Delaware; 19, vigorous grower, prolific and good, ripens with Delaware; 33, vigorous grower and prolific; fair, ripens with the Delaware. No. 15 the best with me.

JOHN W. BAILEY.

Plattsburg, N.Y., 1867.

THE ONONDAGA GRAPE.

W. Brown Smith, Syracuse, N.Y., writes of this as follows: —

"The Onondaga grape is a seedling grown in Fayetteville, in this county. A cross between Diana and Delaware. It appears to be entirely hardy, quite as much so as the Delaware, and the fruit ripens at the same time with it. It is of amber color, good size, nearly as large as the Diana. We think it combines, in some degree, the flavor of both these varieties, Diana and Delaware. It has a thick skin, and is a good keeper. The amount of wood it makes is not large, but what there is, is strong, similar to the Diana."

DAVISON'S THORNLESS BLACK-CAP RASPBERRY.

Joseph Linton, of Angola, N.Y., writes: — "The first plant of this new raspberry came up in the garden of Mrs. Mercy Davison, in the village of Gowanda, N.Y., about eight years ago, where it still stands a large and thrifty bush. It has borne abundant crops of large and delicious berries ever since. Although in many respects like the Doolittle, in others it differs so widely from it as to warrant the belief that it is a distinct variety. Like the Doolittle, it propagates from the tips of the canes, and does not spread from the root. Its canes are entirely *thornless*.

"The fruit is similar in appearance, and equally large and abundant, but is sweeter, and six to eight days earlier. It is more stocky and tree-like in form, and does not require staking and tying up to prevent it being broken down by the wind.

"Originating, as it does, in this latitude — $42\frac{1}{2}$ degrees — it is very hardy, and withstands the severest cold of our winters unprotected."

APPLES IN NIAGARA COUNTY.

Isaac H. Babcock, Lockport, N.Y., writes: — "The yield of apples in this county will probably be over two hundred thousand barrels, producing not less than half a million of dollars. The apples from this county are conceded to be the best sent to market for *long keeping* — better than from Orleans and Monroe, directly east of us.

"This is believed to be owing to our position between the two lakes. In spring, our prevailing winds are from southwest, and, coming from off Lake Erie, are cold and retard vegetation, so that they mature late in cold weather. The counties east of us are nearly beyond the range of this lake atmosphere, although, with us, getting the advantage of the large body of water on the north. A great many young orchards are in cultivation, not yet in bearing. It is already the most lucrative branch of farming.

"I can remember when apples were considered scarcely a marketable commodity; but I cannot remember when the crop in this county has been a failure, or anywhere near it, though of course the amount fluctuates. While on the subject of apples, I must give you one item. A Mr. Davis, near Youngstown, in this county, marketed this year six hundred barrels of choice fruit from four acres of land. From one tree, Rhode Island Greening, he barrelled twenty-six barrels, put up in the presence of witnesses. Enough of apples.

"We believe that certain localities in our county will show the same superiority for grapes, when sufficiently tested. Running through this county from east to west, parallel with Lake Ontario, but some ten miles distant, is what is called the 'Mountain Ridge,' from twenty to one hundred feet in elevation at different points, some of the way a ledge of limestone, some of the way a steep slope of cultivated land. *Below* this ridge is our best grape land. Frosts hold off in the fall even later than on the shore of Lake Ontario. Last year, the first killing frost was Nov. 6th; this year,

Nov. 10th. Above the ridge, on the high ground, the foliage will be killed; while below, on the north, not forty rods distant, it will be all green.

"Our best soils for the grape, I regard as a *clay loam*, but not clay enough to work hard in a dry summer following a wet spring, and such as have natural drainage. Our stiff clays require under-drainage, which is expensive, and uncertain as to continued success. Sandy soils are to be avoided. Some excellent results have been achieved on gravel or drift, and the better for having a considerable clay admixture. These are our earliest soils, and excel for market fruit, Hartford and Delaware succeeding admirably. What we most need, is the right varieties and intelligent culture and training. I am opposed to much summer-pruning; think we are too anxious to assist Dame Nature. Some varieties want more room, others less. The Delaware will bear high culture, and will pay for it. The Diana wants treating to leanness."

OHIO.

SEEDLING HYBRID GRAPES.

DELAWARE, Ohio, 1867.

I feel as though it was rather premature for me to say any thing about my seedlings, as I have not yet had sufficient experience to determine their character satisfactorily even to myself. The two of which I exhibited you samples, I regard as the best I have yet produced, and as table-grapes. As to hardiness, they stood wholly exposed for several years, until last winter, when I covered them, being anxious to have them fruit, and wishing to guard against possibility of injury to fruit-buds. So far as I have observed, I think them as hardy to resist the effects of cold as Catawbas, and with foliage as hardy and healthy as Delaware. As to productiveness, etc., I can say nothing. They are both from Delaware seed, cross-bred or hybridized with Grizzly Frontignan. Another hybrid, from Delaware seed, hybrid-

ized with Black Hamburgh, bore this season for the first time, and is a black grape, with much of the Hamburgh flavor; the general character of the vine much like the others. A cross-breed between Delaware and Logan, from Logan seed, seemed also to have some good qualities, ripening very early; I think, a week or more before the Hartford. Flavor much like Delaware, but more vinous or sprightly, and in consistence very juicy and free from pulp, and devoid of foxiness. Bunch and berry, this, its first year of bearing, both small; color, black. Another cross, between Logan and Catawba, somewhat resembled the above; but the bunches and berries were much larger, and period of ripening later — about with the Concord. The above are the only ones among the many seedlings and hybrids I have raised, that I consider even *promising*, unless it may be the seedling Delaware I exhibited you, which may have some value for wine, as it is perfectly hardy and has foliage nearly as heavy as Concord, and is very productive. It is, however, inferior to the Delaware as a table grape, and seems to have the bad habit of falling easily from the bunch if over-ripe. I expect to have, every year, new seedlings coming into bearing, and each year will also further develop those which have borne; and if any of them prove really valuable acquisitions, they will be exhibited, and introduced if pronounced worthy by competent committees, but not otherwise.

Geo. W. Campbell.

SWITZERLAND PEACH.

W. H. McKinney, Morrow, Warren Co., Ohio, writes: — "Of peaches, there is one variety I esteem an acquisition. It is known as the *Switzerland;* a fine, large, white flesh; free stone; blood-red around the stone, with red veins through the flesh. It is, with us, a good bearer; much better than some of the varieties well known among cultivators. *If I were planting a large orchard, say fifty acres, I would have one third the Switzerland.* These peaches,

wherever they are known (on account of size and beauty), will outsell all others in market, either for table or canning purposes."

LUM'S EVERBEARING RASPBERRY.

H. B. Lum, Sandusky, Ohio, writes, that, since the American Pomological Society's meeting at St. Louis, the name of his Seedling Raspberry has been changed from *Autumn Black* to *Lum's Everbearing*. The variety is thus described: Plant resembles the common black or Doolittle, but is more stocky, and not so tall. It never sprouts from the roots, and is increased, naturally, only from the tips. Fruit large, black, and sweet, resembling the Doolittle in size and quality at the summer fruiting; but the berries are much larger in September and October, if the weather is favorable, frequently measuring three fourths of an inch in diameter. Berries commence ripening on the old wood about the first of July, and the crop, according to the size of the plant, will be fully equal to the Doolittle. Before the berries are all gone, new shots will have pushed out from the base of the plant, which will also be loaded with fruit; and thus a succession will be kept up until late in the autumn.

SEEDLING SECKEL PEARS.

Thomas H. Gerrin, St. Clairsville, Ohio, forwards the Secretary a number of seedling pears, under numbers, of which descriptions have been made and retained until the originator shall give to them a name. Several of them are of great excellence in quality, but small in size. Their season November and December, or into January.

ILLINOIS.

SEEDLING APPLE.

P. T. Bliss, Aurora, Kane Co., Ill., sends samples of a seedling apple grown by Silas Reynolds. It is of quality almost "very good;" but small in size.

IOWA.

EXTENDED TREE PLANTING.

John Edgarton, Coal Creek, Iowa, writes, "There is great enthusiasm in tree planting. Orchards are all around me of five hundred to one thousand trees; and one man has already purchased ten thousand trees for planting in spring. Of these, three thousand are the Willow Twig apple. That variety, with the Jonathan, Rawles' Janet, Ben Davis, Dominie, and Winesap, are among if not our best and most profitable sorts."

PROVINCE OF ONTARIO, C. W.

NEW GRAPES.

D. W. Bradle, St. Catherine's, Ontario, writes of new grapes as follows: —

Laura Beverly. — This is a new black grape, much resembling the Hartford Prolific in bunch, berry, and time of ripening, but of better quality. It was raised by the Rev. Alexander Dixon, of Port Dalhousie, in this county, and never has received any protection or special treatment. It has the merit of being perfectly hardy, a great bearer, ripening early, of good quality, free from pulp, and hanging perfectly on the bunch. It is well worth a trial.

Arnold's Hybrids. — These were raised by Mr. Charles Arnold, of Paris, County of Brant; some of them from seed of the Clinton, fertilized with the Black St. Peters, and others from seed of a wild frost grape, fertilized with Black Hamburgh. They are a great acquisition, and I do not hesitate to say that I expect they will prove of more value than any of the Rogers Hybrids. I visited Mr. Arnold's vineyard this season, where I carefully examined the plants in bearing, and came away rejoicing that Canada could boast of such an intelligent and enthusiastic horticulturist, who had produced new varieties of grapes so decidedly in advance of many others so vauntingly pressed upon public attention. It

is to be hoped that when Mr. Arnold sends out these grapes, he will give them names, and not send them out designated by numbers, — a practice that has given rise to endless confusion and mistake. The great wisdom shown by him in selecting for the seed-bearing parent the hardy Vitis Cordifolia, or Frost Grape, which is free from the tough pulp so persistently present in the Vitis Labrusca, or Fox Grape, is apparent in the fine, melting character of the fruit of these seedlings. The autumn frosts do not injure the grapes, while the wood ripens early, and almost to the very tip, enduring the rigor of our winters without any protection. Only one of Mr. Arnold's seedlings is white; the others are all black, and will, I hope, be all extensively tried.

Mr. William Read, of Port Dalhousie, in the County of Lincoln, has been taking great pains in hybridizing grapes, and has produced some very promising sorts. One of his white grapes, which he has named Silver Cluster, is far superior in this climate to Allen's Hybrid, Rebecca, or any other white grape yet offered to the public. His Black Jack is also a promising grape, free from pulp, and has a very agreeable flavor. Many other seedlings are undergoing trial on his grounds. Of course, the ultimate value of all these new grapes remains to be ascertained, by planting and ripening the fruit in different soils, exposures and climates; but that some of them will prove of great value, I have no doubt.

GEORGIA.

REPORT OF P. J. BERCKMANS.

APPLES.

Augusta, Ga., Dec. 9, 1867.

I am happy to notice an increased interest in the cultivation of this, our most reliable orchard fruit. It is only a few years since, that Southern Seedlings have been diffused, and these have, in the greater part, contributed to the impetus which the culture of the apple is receiving. As is well

known, few winter apples of northern or foreign origin succeed in this section. We can only depend upon southern originated seedlings (and these in a measure originated in the middle sections of Georgia, Alabama, Mississippi, and South Carolina), for winter apples.

Another fact to be borne in mind is, that many varieties originated in the mountainous districts of North Carolina and even Georgia, and keeping well there, fail to retain these keeping qualities when cultivated in the lower sections of Georgia and Alabama, and especially when the trees are planted in the sandy sections of those States. Whenever clay is deficient in the soil, the fruit fails to keep. The limestone region is the most favorable to winter apples. Summer apples, of Northern or European origin, improve in quality and size when brought here.

The productive capacity of the apple is remarkable. Trees planted six years ago have produced three good crops of fruit; and that of the past summer was remarkable for its abundance. Many trees, in an orchard of one thousand trees, produced ten bushels of sound fruit. If the tree produces so abundantly, it is, as a matter of course, of shorter duration than in higher latitudes, where its productive age is less precocious than here. Still, we can count upon twenty-five years of life for an apple tree, during which period from twelve to fifteen crops can be expected. The borer is, however, beginning to destroy many orchards, and it is increasing to a fearful extent. Caterpillars are comparatively harmless, as they never appear in large quantities. Late spring frosts seldom affect the fruit crop; and where the fruit is thinned as soon as set, regular annual crops are almost certain. If not thinned out, then we can only expect a full crop every alternate year. Our best varieties are

Summer. — Red Astrachan, Carolina Watson, Early Harvest, Early Red Margaret, Family, Homony, or Sops of Wine, Horse, Julian, Nantahala, Red June, Rhodes's Orange, etc.

Autumn. — Buncombe, or Red Winter Pearmain of

Downing, Carter's Blue, Carolina Greening, Disharoon, Equinetelee, Hoover, Lauren's Greening, Mamma, Taunton, Yopp's Favorite, etc.

Winter. — Ben Davis, Cullasaga, Holly, Hockett's Sweet Horn, Junaluskee, Kithagerkee, Mangum, Maverick Sweet, Nickajack, Oconee Greening, Pryor's Red, Shockley, Stevenson's Winter, Yates, etc.

As to the quality of Southern winter apples, the protracted warm summer weather allows the juices to be eliminated to such an extent that we have very few acid winter apples, the generality being sweet or subacid. They also are generally highly colored. Very few light-colored varieties will stand through August, if we except a few varieties like Santouchee, which is almost snow-white, and seems to stand any amount of warm weather without burning.

PEARS.

Two consecutive years of blight have devastated the pear orchards in this section, and caused its culture to be looked upon as uncertain. Previous to 1865, we had a few cases of blight at rare intervals, and the culture of this fruit was receiving much attention. As the past season has been entirely free from this destroyer, it is to be hoped that orchardists will be encouraged to continue the culture of this heretofore reliable fruit.

The pear-tree has no other disease than the blight; no insect, except the caterpillar, attacks it. Dwarf pears are in general unsuited for orchard culture; they should be planted in gardens, or where they can receive more attention and nutriment than is generally bestowed upon them; hence the failure with many persons who plant dwarf-trees. The Standard should be preferred for orchards. Few varieties of pears can be recommended for general cultivation, as our season of maturity extends from end of June to October. We require but a limited number of well tried varieties. We have few winter pears of southern origin; almost all

ripen during the summer or fall. A few favorite varieties extensively cultivated in the Northern States, are worthless here. Such are Louise Bonne de Jersey, Vicar of Winkfield, etc, — the latter deteriorates in quality as it is brought southward; it is here unfit for any purpose.

Other varieties, again, improve in size and quality. We have frequently raised Lawrences weighing one pound, and of exquisite flavor, and Triomphe de Jodoigne of eighteen ounces, and enormous size. The new seedlings of Mr. Dana, of Massachusetts, are most vigorous and productive, but they are, without exception, of third quality. Clapp's favorite is worthless. On the other hand, Seckels will grow to the size of ordinary Bartletts, and be of exquisite quality. The latter is also increased in size, and is as popular here as in the Northern markets. Our most reliable varieties are Bartlett, Belle Lucrative, Bloodgood, Beurré Giffart, Buffum, Flemish Beauty, Kingsessing, Madeline, Seckel, St. Michel Archange, Urbaniste, Beurré d'Anjou, Beurré Clairgeau, Beurré Diel, Beurré Easter, Beurré Superfin, Duchesse d'Angoulême, Glout Morceau, Lawrence, Onondaga, Passe Colmar, and Winter Nelis.

The pear in general is not as productive here as in more elevated sections; but a total failure has not been known in ten years.

PEACHES.

This fruit *seems* to be indigenous to the soil, as it is every where found in abundance, and of most vigorous growth. Except the borer, the tree is free from insects, or any disease whatever. The former can be easily guarded against, by hilling up the trees with earth early in the spring, leaving this cone undisturbed until November, then levelling off again, and repeating this operation yearly. The hard bark of the trunk of the tree prevents the insect from puncturing it, and depositing its eggs. Orchards thus treated have been free from borers for years past. The curculio has, however, of late been very destructive to our fruit. Heretofore it

only attacked the nectarines and some peaches of very delicate skin; but the past year no variety, however downy, was free from its depredations.

The Yellows are unknown here, and it is a remarkable fact that a contaminated tree brought from the North, regains its vigor as soon as transplanted here. Immense quantities of peaches are raised for distilling and drying, and the supply of New York market. This latter feature of peach-raising, has again been revived, and from present appearances bids fair to become an important and lucrative business along the main railroad lines, and especially in the lower portion of the State. Peaches grown in this section can be laid down in New York seventy hours after being gathered, and will net a handsome profit to the cultivator. For this special purpose, early varieties alone are advisable to plant; so that the bulk of the crop is sent off before Delaware and Maryland fruit is ready for market. The best varieties for shipping, are Early Tillotson, Large Early York, Early and Late Crawford, Stump the World, and Columbia. Hale's Early bids fair to be the most profitable kind, but has not been sufficiently fruited to enable me to give a decided opinion as to its shipping qualities. We have early Southern varieties vastly superior in quality to most of the above, but they are too tender in texture to stand carriage. Clingstones are unfit to carry to distant markets. They can only be appreciated to their full extent when picked from the tree fully ripe. The country abounds with seedling peaches, the bulk of which is inferior; but as there are several types of peaches which reproduce almost identically by seed, there are large orchards of seedlings, every tree being nearly alike and of good quality. Such are the Indian, Lemon Cling, Heath types, etc.

Of the Indian types, there are many varieties; some are yellow freestones, like the Columbia, others blood-red clingstones, or white clingstones; all, however, have the peculiar brown red stripes upon the fruit, which characterize the type. This type is much esteemed, as it seldom produces

an inferior peach, and, strange to say, it seldom hybridizes with other varieties. The Lemon Cling type seldom varies by seed; it never produces a freestone, but ranges from pure white to dark orange flesh; and this is always red at the stone. The Heath type, known here as White English, is very popular; its varieties are numerous, but all have a family resemblance, and are white to the stone. In general, all the clingstone peaches, whose flesh is white through, are sweet; and those being red near the stone, subacid, or even acid. For distilling, the clingstones are preferable, as they yield more juice than the freestones. Three bushels of good clingstones will yield, on an average, one gallon of proof brandy; whereas the bulk of freestones will not yield over one half that quantity.

The peach will produce the second year from the seed, and when properly cared for, will live twenty-five to thirty years. The great fault with most cultivators is, that they allow the trees to overbear upon the extremities of the branches, the weight of the fruit causing these to split and break off. Annual shortening in is of the utmost necessity, and unless this is attended to, the peach tree will soon decay. Spring frosts are often very destructive. As a preventative, it is the custom to build fires in the orchards, so as to create a dense smoke. By this means many crops are saved. The season of maturity begins June 10th to June 15th, and some late varieties keep until the 10th of November, a period of nearly five months.

PLUMS.

The curculio is an untiring enemy to our finer varieties of plums; but our wild varieties are comparatively free from its ravages. There are several native plums of fine quality. They combine great hardiness of growth with immense fertility; and, as before said, being in a measure free from the curculio, they should form the basis of experiments from which we may expect improved varieties, adapted to the cli-

mate. The type Chickasaw, is a very suitable one to experiment upon. The fruit is large, showy, and of an agreeable and peculiar aroma. The plum-tree is free from the black gnat. The finer varieties have a tendency to throw all their vigor in one branch, causing this to outgrow the others; and when checked by cutting back, the sap takes an opposite direction, which renders it difficult to give the tree a good form.

CHERRIES

Are uncertain here. A few degrees north they thrive better. The Mahaleb stock is the most suitable. The cherry stops its growth when the July sun pours out its warm rays; towards September, the sap again becomes active, puts out new leaves and blossoms, and weakens the tree for the following year's production.

A great cause of the failure of fruit-growers is the training of trees with high naked bodies. These are impossible here; we require a low stem, which is well shaded by the foliage of the tree. This applies to every class of fruit-trees; and when this fact is heeded, success in orchard-culture is increased.

GRAPES.

The cultivation of the grape as an article of commerce has been inaugurated in the middle portion of the State thirty years ago, and had received a great deal of attention until the decay in the fruit made its appearance in 1862. Since then, the greater portion of the vineyards have been abandoned, or have not been as productive as in years past. The Catawba seems to have universally failed; the Isabella likewise; even our native varieties, like Warren and Pauline, have either decayed or become very unproductive. This has caused the *undaunted* to look for other varieties more reliable; and in the Scuppernong we have found a grape combining as many qualities as we can expect from any fruit.

Its peculiar growth renders trimming unnecessary, thereby bringing its culture within the reach of everybody, as it requires no skilful artisans to train it, like the other varieties. Immense fertility and freedom from decay are added to its adaptation to any soil and situation. As this is an accidental but already improved variety from the wild type, *ritis rotundfolia*, we may reasonably expect to see still better varieties of this type; and I am convinced, from experience, that the future vineyard culture of the South must derive its existence from this type. We have other types, whose varieties are more delicate, and will produce different and perhaps more generally relished wines; but none are as reliable and will bring as much pecuniary profit to the agricultural community.

Of the large list of varieties now introduced, few are really of any value for this climate. The *Hartford Prolific* is our earliest and best market variety; it stands shipping better than any other; colors evenly and rapidly, and keeps its berries well on the stems. During the past eight years, it has never failed to produce sound and abundant crops. I consider it the most valuable market grape we possess, and its culture for supplying the northern markets has been inaugurated. *Delaware* has proved successful almost everywhere. *Israella* bids fair to rank with the latter. *Iona* fails as far as producing sound fruit. *Adirondack* does not stand the summer, the vines being regularly killed at the frost-protracted, warm, and dry weather. *Concord* is reliable, and for carrying to market at short distances is valuable; it does not stand long carriage. As a wine grape, the *Clinton* stands first; it has not failed once in seven years.

As regards the training of grape-vines, a great error is committed by most beginners, not excepting practical French and German vine-growers; and this is in the summer pruning which they practise until they find, to their cost, that different climates require different modes of culture. All our good grapes mature from the first of July to middle and end of August, during the warmest portion of the summer. If

the vine receives a pruning during that period, or even before the maturity of the fruit, the sap is thrown back, and the leaves invariably drop, exposing the fruit to the sun; and, as a consequence, it is literally cooked on the vine. We require *shade;* and the aim of the southern grape-grower should be, to train his vines in such a manner as to attain that end. In parts of Europe and in the Northern States, the great desideratum is to give as much sun to the fruit as possible. Here we require the reverse; consequently, if we no not modify our modes of training the vine from the methods practised abroad, we never can expect good results.

STRAWBERRIES.

After experimenting with almost every variety introduced since the past fifteen years, we have given the preference to the Wilson's Albany, as combining more qualities than any other variety. The season of maturity commences about April 15th, and is often continued until July. Some seasons, we have had occasional pickings until August 20th; but there are exceptions, and the full season can only be said to last six weeks. As a consequence, we do not gather any more fruit (if as much) during this period than the same variety will yield in three weeks farther north. The Wilson's Albany will often give a *winter* crop of fruit. Fine and well matured strawberries were sold in this city last December, and were purchased at one dollar per quart. These *feats* weaken the plants; and it is not good economy to allow them to produce fruit out of season.

RASPBERRIES.

The varieties of European origin do not stand the summer. The varieties belonging to the American types of Purple Canes and Wild Red will stand. The most vigorous and productive are Allen's Red and Imperial Red. Doolittle's Black Cap and Philadelphia thrive well; but

their fruit is hardly of second quality. As a market fruit, I do not think it will ever become remunerative, the fruit being too easily bruised; and ripening during quite warm weather, it soon ferments.

BLACKBERRIES,

As a market fruit, are not cultivated. The New Rochelle produces large crops; and being later than our native varieties, it may, eventually, be made to sell in the market. Wilson's Early and Kittatinny have no intrinsic value here; their merit north is earliness; here they are not as early as the running blackberry or dewberry, and not half as good.

Gooseberries and currants are of no value whatever, as they cannot stand the summer weather.

Figs, pomegranates, olives, jujube, etc., are everywhere cultivated for home consumption. The former bears in the greatest profusion; and never failing in its fertility, it should receive more attention than is bestowed upon its culture. As an article of commerce, the fig must certainly yield a good profit to those who would undertake to dry it for market; and it is to be hoped that some energetic person will inaugurate this feature of Southern fruit culture.

P. J. Berckmans.

SOUTH CAROLINA.

Pomaria Nurseries, South Carolina.

It would have given me the greatest possible pleasure to have attended the session of the Pomological Society and to have met the friends of fruit culture and interchanged ideas on a subject so important to the future prosperity of the whole country, but the desolations of war coming upon me here, engaged as I was in the peaceful pursuit of horticulture, left me without the means of doing so. During the past seven years in which we have been separated, we have not been idle, but have steadily pursued our calling, and tested

the different varieties of fruits. In this we have met with great encouragement by the addition of many new native varieties admirably adapted to our climate. Fruits were first obtained from the best nurseries at the North and from Europe. The result was that all the winter varieties of apples proved to be autumn kinds, and most of these rotted and fell from the trees before ripening fully. We at once had recourse to the introduction of native seedling varieties, and these were soon found to be admirably adapted to our soil and climate; and so abundant were these varieties that we found difficulty, after we became engaged in the nursery business, to select from so many which were worthy of cultivation. The early Northern varieties almost invariably succeed well; and some of the winter varieties are admirable fall varieties, producing fair and abundant crops. In the mountain or upper regions of this State some few of the best Northern varieties succeed, such as the Baldwin, Northern Spy, and American Golden Russeting.

We give a few of our varieties produced in this State as worthy of general cultivation in the South.

Carolina Red June. — This variety, now so generally disseminated, was produced within a few miles of Pomaria, by Henry Suber, and persons came a day or two's journey to get the scions for grafting.

Aromatic Carolina. — Produced from seed by the late Johannes Miller. Medium to large, and very productive; flavor delightfully aromatic, and considered an acquisition wherever cultivated.

Augustine. — Large, red, rich, pleasant and productive; a South Carolina seedling of great promise.

Epting's Premium. — Large, greenish with red stripes, flesh juicy and excellent; received the premium of ten dollars from the South Carolina State Agricultural Society.

Epting's Red Winter. — Large, beautiful red, resembling a fine specimen of Carolina Red June; flesh yellow, with a rich pine-apple flavor; keeps well until Christmas.

Lever. — Medium; ripe in November; keeps until April.

A handsome red apple of best quality; tree remarkably vigorous; produced near Pomaria.

Maverick's Sweet. — Large; ripe in November, and keeps well until March. A seedling produced by the late Samuel Maverick, of Pendleton, South Carolina; well known in Southern nurseries and worthy of extensive cultivation.

Cook's Red Winter. — Medium to large and of best quality; ripe in October, and retaining its flavor well until April. Produced by Jacob Cook of this district. Tree vigorous and a regular bearer.

Hoover. — Large, oblate, dark red, juicy, acid, crisp, good flavor; ripens in October; tree vigorous and very distinct. Produced in Lexington District.

Greening Pomaria. — Large, juicy, rich, sprightly flavor; ripe in November, retaining its flavor until March; produced at Pomaria, South Carolina, and one of the best of this popular variety.

Hammond. — Medium to large, color green, flesh juicy; ripe in November, and keeps in great perfection until March: a South Carolina seedling worthy of extensive cultivation.

Ferdinand. — Fruit large, pale greenish yellow, flesh tender, ripe in November and keeps well; a seedling of Pomaria, worthy of a place in every collection.

Susannah. — Large, oblong, oval, greenish yellow; flesh crisp, with a rich aromatic flavor; ripens in November and keeps till April. Premium apple of the State Agricultural Society 1859; produced at Pomaria.

Crayton. — Medium to large, fine flavored; ripe in November and keeps until April.

There are many other varieties; among them, Gore, Champagne Crab, White Crab, which are worthy of general cultivation; but our limits will not admit of even brief descriptions.

THE PEACH.

The peach is so generally cultivated that it would seem almost useless to urge its claims upon our people. Here in the South may be considered its proper home, though it is too often propagated from the seed alone, and whole orchards of comparatively worthless varieties are planted. The best varieties should be cultivated; and as we have peaches ripening for one month, and fit to send to the Northern market, before they can be produced there, an abundant supply should be grown.

Until within a few years past there was a deficiency of choice varieties to supply the season after the Heath Cling, which matures here the twentieth of August; but we have been able to add superior September and October varieties. Among those produced here I would mention Christiana, Weysinger, Counts Cling, Pomaria Cling, Glennore Cling, Atwood's Late Cling, Covington Cling, Lamb Cling, Marlboro', Epting's Cling, Scott's October Cling, — this last ripening the twentieth of October and hanging until frost, and, with the others, having the exquisite flavor of the early peaches; while among the early varieties may be mentioned, Sloman's Early, Summer's Early, Amelia, White Sugar, White Pace, and many others equal to the best.

The principal enemy which the peach in our climate has to contend with, is the borer (*Egeria exeliosa*). An easy and effectual remedy, which has been generally adopted with large orchards, is to make small hillocks of ashes about the stems of the trees in April. The eggs of the fly are deposited at the surface. In autumn spread the ashes about the roots of the trees; the eggs thus perish, and the tree receives benefit from the scattered ashes. A hillock simply made of earth will answer the purpose, when the fruit is subject to worms, in gardens. Pick up the waste fruit daily. In orchard culture give swine the range and the fruit will soon be found healthy.

The severe frost of the twenty-ninth of March injured the peach crop considerably. Some few favored localities pro-

duced a plentiful crop. I observed in an old orchard which had been sown down in barley that a sufficient number of blossoms were retarded from a thick sward of barley growing under and about the roots, keeping the earth cool, that an abundant crop was produced, while the orchard cleanly cultivated had scarcely any frost — establishing the fact that if leaves or straw were placed over the surface to keep the ground cool until after danger of spring frosts were over, that injury in some cases could be prevented.

Summer's Early. — Ripe July first; medium to large; flesh white and firm, beautiful blush; the handsomest early market peach grown; bears transportation well.

Summer's Large Rareripe (to distinguish it from the foregoing). Ripens a week later; flesh white and most delicious of its season. These two varieties produced at Pomaria, South Carolina.

Stroman's Early. — An excellent early market peach.

Amelia. — Large, juicy, color fine red; a fine market peach; can be picked several days before ripe.

Aremie Cling. — Produced at my nurseries. Fruit very large, flesh yellow, juicy, and very high flavored; ripens the tenth of August.

Pomaria Cling. — A peach of the finest size, flesh white, juicy; perfect in flavor, and of beautiful blush. Ripe August first to tenth. I think this, with the Aremie, the best peach produced at the South.

Poinsett Cling. — Ripe August tenth. Large, round, rich yellow, with ruddy cheek; sprightly vinous flavor. Excellent and productive; seedling produced at Pomaria.

Count's Cling. — August tenth to fifteenth. Large, white, with red cheek; flesh white, rich, juicy. A superior seedling, produced by H. H. Counts, of Lylesford, South Carolina.

Glennore Cling. — Ripe first to tenth of September; large, globular, beautiful and showy, sweet, crisp, pleasant flavor. The most superb peach of its season. Produced from seed by Dr. George W. Glenn, of Newberry, South Carolina.

Atwood's Cling. — Ripe fifteenth of October. Large, quality best; productive. Produced by Rocius Attwood, of Newberry, South Carolina.

Christiana. — September. Large freestone, beautiful flesh, white to the stone, delicious flavor, and pronounced the best September peach grown; deserves a place in every collection. Seedling of Pomaria.

Covington Cling. — Large, very superior, fine flavored.

Ravenscroft Cling. — Seedling of Pomaria. Superior to any of the Heath varieties.

Marlborough. — No. 1, and No. 2. Large, beautiful varieties. Excellent and productive.

Manassas. — Large, globular; skin yellow, flesh pale lemon, becoming red next the stone, sweet and delicious, and superior to any of the Lemon Cling varieties.

South Carolina Clingstone. — Ripe from the first to the tenth of September.

Scott's October. — Ripe from the twentieth of October to November first. Medium to large, clingstone, pale dingy lemon color, fine flesh and rich lemon flavor. A seedling from the garden of Jacob C. Lyons, Columbia, and disseminated by Edwin I. Scott; deserves a place in every orchard in the South.

Croft's Yellow Clingstone. — A large superior cling, produced by Dr. Randall Croft.

Wateree Cling. — A superb yellow cling, ripe the tenth of July.

Folks Cling. — Ripe the fifteenth of July; superior white fleshed clingstone, of highest flavor.

Salem Cling. — Ripe the first of July, the best early cling grown.

White Sugar. — A superior freestone. Ripe the middle of July; large, sweet, and exquisite flavor.

Velvetia. — A beautiful freestone, ripe July fifteenth; exquisite flavor.

Jordana. — This with Velvetia produced by Dr. Pitts, of Clarendon. Ripe the tenth of September; of best flavor, and worthy of general cultivation.

Epting's Cling. — Ripe with Glennore; very productive, and of excellent flavor.

White Pace. — A large and superior seedling of this well known family in the South; better than any of the yellow fleshed varieties; free, August: worthy of general cultivation.

Lamb Cling. — A South Carolina seedling of great promise. Superior production.

Chaplin's Red and Late Green. — Two very late varieties, ripening only in the middle portion of South Carolina and South; valuable where they can be grown as the latest varieties.

THE NECTARINE.

Should receive the same treatment; and if care was taken in its culture, it would prove much more productive.

THE APRICOT.

Is usually destroyed, blooming too early; occasionally we have most abundant crops of fine fruit.

PLUMS.

These have been so generally attacked by curculio, that their culture has been neglected. Upon the rich clay soils, where pigs and poultry have free access, and the ground is tramped, we however have large crops. The varieties of the Damson are more hardy, and these usually produce heavy crops without much care. The finer varieties should, however, receive attention, and occasionally we have produced some delicious varieties. The Pomaria Gage is of medium size, blue, with heavy bloom, and is regarded as superior to its parent, the Green Gage, in flavor, and is very productive.

PEARS.

The cultivation of the pear is on the increase, and the old standard varieties, and many of those lately introduced from

abroad succeed well as standards on the clay soils which are usually dry; while on the Angers quince many fine varieties succeed well, that do not usually succeed at the North. This is owing to the fact that the quince here makes a much more vigorous growth, and the pears, when properly treated, worked upon, make beautiful small standard trees; and as an instance of longevity, I would here record the fact that in the garden of Dr. Hasel, at Georgetown, South Carolina, there are fine pears, worked upon the quince, that have been in bearing seventy years, and are still healthy and productive.

We are adding new seedling varieties, which are excellent. The Upper Crust, Dr. Bachman, Poinsett, Fore, and Hebe, seedlings of this State, will compare with the best varieties. The Hebe rivals in size and productiveness the Duchesse d'Angoulême, and it may be considered the triumph of pear culture in the South, giving us what we so long desired — a pear of large size, fine sprightly flavor, hanging well until frost, and maturing without shrivelling; qualities long wanted for a winter pear in the South.

Many of the varieties produced from seedlings of the late Prof. Van Mons which did not mature in the short, humid climate of Belgium, would have proven desirable winter varieties here; and we would respectfully ask, where seedling varieties of promise do not mature well, that they be sent South for further trial before they are rejected. So many varieties succeed that we have great difficulty in reducing the number to a reasonable limit for nursery culture.

Upper Crust. — Ripe July; productive, and described in Downing's Fruits.

Dr. Bachmann. — Produced at Pomaria; size medium; round, green, with dull red cheek; juicy, vinous, and refreshing.

Poinsett. — Tree spreading and healthy, August; medium, oblong, blush on exposed side; rich, aromatic flavor, very productive. Produced at Pomaria, and named in compliment to my friend, the late Hon. Joel R. Poinsett.

Hebe. — Very large, six usually weigh eight pounds; of

greenish yellow color, dotted all over with russet specks and blotches; stem short, thick set, in deep basin; form round, obovate, with irregular protuberances like Duchesse d'Angoulême. Flesh sprightly, mellow, and buttery, with rich champagne or vinous flavor. Ripe in November, and matures without shrivelling.

THE STRAWBERRY.

Produces never-failing crops of fine fruit. The Albany maintains its character here for great productiveness and is well adapted to the climate. The Hovey, as a berry of delicious flavor, from long cultivation seems thoroughly acclimated. Jucunda, Agriculturist, and many of the new varieties are promising.

THE RASPBERRY.

The finer European varieties succeed when sheltered on the eastern side of a fence. The improved American Black Cap varieties seem to be more hardy, and succeed well. Several of the new varieties are under trial and promise well.

CHERRIES.

All the finer kinds succeed on the Mahaleb stock here. Purple Griotte, Elton, — Florence and Cumberland being best. In the upper Carolina all the varieties do well upon the mazard stock. At Pomaria most of the varieties ripen the first week in May; the Cumberland and Florence a week or two later.

QUINCES.

The quince is of easy culture, but requires to be grown in rich, deep soil, to produce large fair fruit. As a remunerative crop for market, it is worthy of general culture; the fruit always commanding a ready sale, in our cities and towns, at remunerative prices. Barnyard manure, with a

good supply of salt, mixed before it is applied, and well spaded in around the trees, will render trees; if properly pruned, fruitful. Ashes will at all times be beneficial in producing good sound fruit. Mulching is also useful in preserving a moist temperature. The Orange and Reas seedling, are the principle varieties.

THE FIG.

The Fig deserves our attention; is of easy culture, and propagation, and there are many choice varieties. The Celeste, Red and White Italian, and Brown Turkey, are hardy, withstanding the frosts in the upper portion of the State. While south of Columbia, the Alicante, Brunswick, Ischia, and the more tender varieties succeed in the open air, without protection, and produce abundant crops.

THE POMEGRANATE.

Comes up with associations of the fig, and from its fair and lovely fruit, asks for a place when the climate favors its growth, and is an encouraging instance of the acclimation amongst us of a tropical fruit. There are several varieties. The Almond produces often heavy crops of fruit, and with a little attention its culture could be made profitable.

THE JUJUBE

Is hardy here, and produces abundant crops of fruit south of Columbia, and in the vicinity of Beaufort.

THE ORANGE AND LEMON

Succeeds finely in the open gardens in Charleston, and bear abundant crops on the Islands, and in the vicinity of Beaufort, and Hilton Head. It is hoped as the crops now appear to be free from insects, that new plantations will be made of the best varieties.

THE SPANISH MARROW CHESTNUT

And the Madeira nut, or English walnut, both bear abundant crops of fruit in this State, and with the Pecan, should be more generally planted. The fruit, when eaten fresh, is wholesome and agreeable to the taste. They could be made valuable, if grown in sufficient quantities to supply our own markets. The road-sides should be planted with these trees; they would not only be profitable, but highly ornamental; they produce good crops in six or seven years after planting.

THE MULBERRY.

The improved varieties of this fruit are now being generally planted. The Everbearing, introduced by the late Nicholas Herbemont, is generally grown in this State, and is the best, most productive, and hardy, of the improved varieties; it produces never-failing crops of large, sweet fruit, and is in season from 1st May until the 1st of August. Downing's Everbearing, and the large Johnson mulberry, with other varieties, are also grown successfully.

THE GRAPE.

The middle and upper portion of this State, furnish perhaps the best region for planting extensive vineyards. In the vicinity of Aiken, there is a soil admirably adapted to the successful culture of the grape. It is sandy, and free from clay to the depth of from three to four feet. This belt of country extends from the Savannah river, to Aiken, Lexington, Cheraw. The soil is easily cultivated, and with a little manuring very large crops are produced. The lands are cheap,—from two to four dollars per acre,— and present a fine opening for the German emigrant wishing to engage in the culture of the grape. At the first meeting of the Vine-Grower's Convention, held at Aiken, S. C. there was presented a specimen of wine, made from Catawba

grapes without sugar, by the late Senator Hammond, which was equal to the finest foreign wines I have ever tasted. Afterwards, at Gov. Hammond's, I drank of this wine, when I had a fair opportunity to test its excellent qualities. The Catawba has however blighted so much within the past few years, that its culture began to be abandoned, and other inferior grapes, such as the Clinton, etc., have been taken up and grown as wine grapes. Fortunately a new discovery has been made, — a remedy to prevent rot in grapes, — and this will come in time, to restore the Catawba to its place as the best wine grape; being richest in glucose, and the best properties for a wine grape of any other variety yet produced. This remedy has been tested with success upon the Isabella, Catawba, Herbemont, Madeira or Warren, all of which rot badly in this climate, and as it is cheap and easy of access, within the means of every one who cultivates a grape-vine; it is hoped that it will give an increased impetus to the culture of the grape in the United States.

In conclusion: plant vineyards beautiful and interesting about your homesteads; plant orchards rich with the apple, useful in its fruit, and glowing in its white-tinged blossoms; the peach with its lovely blossoms, warm with the breath of spring, and delicious in summer with its abundant fruitage; the apricot, the cherry, and strawberry, beautiful in their early offerings; the pear, with its golden, mellow fruit, always acceptable to the palate; the plum, with its rich, luscious, and abundant clusters; the fig, wholesome and memorable for its associations, — bring all these near your homesteads, and they will invite you to a love of home, and you will have done much to make home cheerful, by enjoying these rural blessings and comforts of life.

Respectfully submitted,

William Summer.

Pomaria S. C., Dec., 1867.

REPORT FROM ST. GEORGE, UTAH, 1867.

* * * Of apples there is quite a number of new sorts regularly propagated with the fine imported sorts, comparing favorably in size and quality with old and favorite sorts; but at present having none before me, I am unable to give description, but at the earliest practical period will do so or forward specimens.

There is our new seedling pear, called the Redfield, extensively cultivated, a strong and rapid grower, early and prolific bearer, nearly all red, good size, and ripens in September and October, grown by Harlow Redfield, in Salt Lake City. Another pear, called the Mecham, very large, bright green, ripens in October.

Of peaches there are a great number of seedlings, thought to be fine. Last season I measured numbers of specimens ranging in circumference from ten to eleven inches, the flavor of some almost unexceptionable, and well worthy attention and propagation.

Of apricots the "Gates," a new seedling, is most noted, and widely disseminated. It is of the size of the peach and quince, and of rich flavor. There are several new ones bore fruit this year, in this city, equal or superior to any in the Territory. Next season we shall be able to notice them more particularly.

Of grapes there are many seedlings fruited the past season, and one especially attracted universal admiration. It was raised from seed of the Malaga, by Mr. Jarvis, of this city; three years old; vine a great grower; stout canes, short-pointed leaves intensely lobed, clusters broad-shouldered, berries large, slightly oval, greenish amber, seeds small, skin thin, pulp tender, sweet and delicious; made nice raisins. The vine is hardy. If this grape fulfils expectations the coming year, it will be propagated in preference to *any* we have yet fruited here.

I have a fruit entirely new, a hybrid cherry, cross between the wall cherry and wild plum. Size of wild plum,

dark brown or black, size and shape of cherry, sweet, pulpy, good; ripens May and June. Early and prolific bearer; tree tall and willowy.

There are several wild fruits here new to me. One, a small red berry, size of red currants, on bushes two to four feet high, very abundant, sweet and delicious; when dried resemble Zante currants. The Indians preserve bushels of them for winter supplies, or trade to the whites.

There are several other sorts, but I have not been able to judge satisfactorily of their merits.

I hope to be with you in Philadelphia, next meeting.

Yours truly, J. E. JOHNSON.

REPORT FROM PARIS, ONTARIO, C.W.

APPLES.

Almost all the apples that succeed in Western N. Y., do well here. The only drawback to the cultivation of this fruit is the codlin moth.

PEARS.

The pear-blight is the greatest enemy to pear culture; no variety or locality seems exempt from its ravages, and it appears equally destructive to standard and dwarf.

PLUMS.

The plum is almost a total failure in consequence of black gnat and curculio. No preventative of the ravages of the "Little Turk" is yet discovered.

PEACHES.

We have not had a crop of peaches for ten years, unless in some localities that are under the ameliorating influence of large bodies of water.

GRAPES.

The most hardy and early varieties generally succeed in favorable localities by being laid down and covered in the winter; even the Clinton is the better for being thus treated. Adirondack, Iona, and Israella, where they have been planted, have been in many instances killed out entirely by the winter, even though covered. Hartford drops its fruit and has but little flavor.

Delaware is frequently rendered flavorless by mildew affecting the leaves. Concord hardy, and generally healthy, but of little flavor. Diana ripens irregularly, rots badly, poor bearer. Rogers No. 15, first-rate against a wall, mildews slightly. No. 3 early as Hartford. Nos. 4 and 19 showy bunches, generally healthy. Allen's mildews as bad as a foreign grape.

Isabella scarcely ever ripens thoroughly. Rebecca very poor bearer, unhealthy, fruit good when not affected by mildew. Clinton is the healthiest grape in cultivation here, and I am persuaded, from many years experimenting in raising hybrid seedling grapes, that Clinton crossed with the pollen of *vitus viniera* will produce a grape equalling in flavor our best foreign varieties, and at the same time possessing the hardiness and healthfulness of the mother.

RASPBERRIES.

All foreign varieties of the raspberry need winter protection: our only hope here is in the Black-Cap family and crosses with it; and although it receives the pollen of our best foreign varieties very reluctantly, I have with perseverance succeeded with a few, and with these few have had no trouble in crossing again, and producing various shades of color and excellence of flavor, and in almost all instances showing the everbearing qualities of the varieties from which the pollen was taken. The Philadelphia is hardy and productive, but of poor flavor.

STRAWBERRIES.

Wilson's Albany is still the berry for the million. Jucunda has only been partially tried.

Triumph de Gand produces a few monstrous berries, but is generally a poor bearer. Hooker is the favorite for flavor, and bears a moderate crop.

Canada is the name given to a new variety originated in this province; a cross between Wilson's, and Triumph. From what I have seen and heard of this comer, I feel inclined to hope that it will prove hardy and productive as Wilson's, large as Jucunda, and as good-flavored as Hooker.

Respectfully submitted by CHARLES ARNOLD.

REPORT FROM NORTH CAROLINA.

The Second Division of the Society's last Catalogue not having been constructed, this Report must be read as connected with the varieties numbered in Division First, and will be of great value as applicable to North Carolina.

APPLES.

2. Is a capital fruit with us, and universally esteemed.

3. Is somewhat cultivated, but too tart; not equal to 26.

24. Sometimes does well; generally decays before maturing.

26. An excellent early fruit.

41. An excellent early fruit.

53. I presume is the same as Carter of Ga.; is fair.

66. Tree disposed to insect blight; but fruit, when in perfection, capital.

71. Highly esteemed for cider; immensely productive and very hardy.

73. Tree subject to disease; fruit tart; good for cooking, and capital for vinegar.

92. In some parts of the State highly esteemed, because of its keeping well.

96. Pretty and fair, but too tart.

123. On rich, alluvial soils, a good fruit; does not so well with me.

163. Our handsome, flat, red-striped, straggling grower; is a good apple on light soils.

171. One of the best apples I ever saw; but with us sorely given to premature decay.

173. With many highly thought of; it makes capital cider.

We regard Hall, Persimmons (Northern Hardskin, Holly, of Ga.), Stevenson's Winter, Roan's White Crab, and Jones' Seedling as good winter apples; Clarke's Pearmain is a good late-fall and early-winter kind; Magnum Bonum for fall, and Julian for summer, are highly esteemed.

PEARS.

1. Very good, but the tree subject to blight.

7. Very good, but the tree subject to blight.

11. One of our best; and the tree, though not vigorous, has proved hardy.

12. Not so good a fruit as I expected; still good, and tree hardy.

16. Capital fruit; large, and well flavored.

19. The best early pear we have; far superior to Bloodgood.

26. Beautiful tree; very juicy, but rather tart fruit; tree not very hardy.

27. Fruit large and sweet, but intolerably dry.

29. I regard as the poorest pear I cultivate.

32. Very nice fruit.

43. About equal to Bloodgood.

45. Has not yet fruited.

46. Specimens I have seen are not equal to those you raise.

47. Blooms too early; fruit keeps well, and is very good.

49. Tree blighty; fruit pretty good for its season.

50. Good fruit, but trees die.

52. Good fruit, but trees not equal to 50.

53. Better than 50, 52, in all respects; trees hardy.

61. Capital fruit; but trees somewhat tender, blighty.

72. Very pretty and fair fruit, of fair, vinous quality.

78. Tree ugly, but hardy; fruit capital; keeps till January.

80. The few specimens I have grown make me think well of it.

83. Has not succeeded so well as I expected; hardy.

86. Always astringent with me, and *very subject to blight.*

98. Very fair early pear; hardy.

105. One of the best of its season.

107. Capital fruit, but tree subject to blight.

108. *Ne plus ultra* in all respects but size; it *is a clear golden russet.*

117. Tree rather subject to blight; fruit, when kept a while, quite good.

121. Good late fall fruit.

CHERRIES.

These do not succeed well, owing to sun-scald. May Duke better than any; Gov. Wood does tolerably; Morellos do well.

PEACHES.

All peaches do well with us.

4. Good for a yellow peach.

7. Good early fruit.

9. Good early fruit.

10. Good early fruit.

11. Good early fruit.

13. If I have the true kind, it is the best freestone I ever saw.

15. Best very early peach, and a good one at that.

16. The most worthless kind I have. It is not worth culture.
18. Capital.
20. Very fair, but not equal to 15.
23. Has not succeeded very well with me.
28. Very good.
31. Very good.
32. Very good.
36. Poor.
38. Very superior.
39. See 30.
44. Pretty fair.
45. Poor.
47. Very good.
48. Very good.
49. Very good.
50. Very good.

Hyslop is very good; and Washington Cling and Thomas Cling are incomparably the best Clings I ever saw; Amelia is fair, and *very large*, and early; Wall large, good late Cling; choice, showy, and tender; flushed, melting, but not high flavor.

We don't cultivate nectarines, regarding them as of no value, on account of curculio.

A few varieties of the apricot do well, when the frost lets them alone. The Breda is, perhaps, hardiest.

PLUMS.

These do well with attention. I have not seen a good Washington or Bingham or Jefferson. Lawrence, Imperial Gage, Green Gage, Imperial Ottoman, Smith's Orleans, are very fine. Quinces do pretty well, but are not much cultivated.

GRAPES

Have not been much cultivated. Catawba does well sometimes. Isabella always rots. Scuppernong always does well, and so does Lincoln. The latter is a small grape, black and very good. It has been cultivated in Lincoln County for years.

Currants, gooseberries, and raspberries do not do very well with us. The Black Cap raspberry, and Houghton's Seedling succeed.

STRAWBERRIES.

These are cultivated only for family use, and not in much variety. Wilson's has done well everywhere. I have tried Triomphe de Gand, but it was worthless with me. My soil is sandy, and therefore not the best adapted to many kinds of fruit.

We raise figs. On the coast, they do remarkably well, enabling one to "sit under his fig-tree."

Very respectfully,

WALTER L. STEELE.

REMARKS BY THE SECRETARY.

On accepting the office of Secretary, I supposed my duties would be little more than compiling and arranging matter for the printer; but, on looking over the matter, I saw that much of it was irrelevant, and that, from many points and sections of the country where the real interests of Pomology were to be advanced, we had little or no information.

From a pride in our Society, and a slight knowledge of its importance and value to the fruit-growing interests of the country, and a desire to present it in as good a light as possible, I at once addressed circulars, desiring information, to all prominent Pomologists.

The responses have come in quite liberally, even beyond our limited means for publication; and I have therefore been compelled to condense and reduce many reports, as well as many of the remarks made in our Convention as given by the reporter, retaining, however, I trust, the gist, or meaning, and substance.

The delay in publishing has been partially with a view to gathering these reports, and partially with a view to revise the Catalogue of Fruits, in accordance with the doings and views of local Societies, and opinions of members of the Revisory Committee. This revision of Catalogue, I supposed, belonged strictly to the Committee on Revision; but, in the absence of that Committee's united action, I have availed myself of their individual opinions, and revised cautiously.

At the next session of our Society, I hope and trust our Southern friends in Pomology will be with us, and enable the Society, through their knowledge, to issue its Second Division of the Catalogue. At the last meeting of the Society, the Missouri Valley Wine-Growers' Association had a fine exhibition of native wines; but, as not being strictly a part of this Society's transactions, all reports relative thereto have been omitted.

Respectfully,

F. R. Elliott.

CATALOGUE OF FRUITS.

DIVISION FIRST.

PLAN OF THE CATALOGUE.

The arrangement of the varieties is alphabetical, according to the nomenclature adopted by the Society. Synonyms are given in a few instances only, where it seemed necessary; and these are placed under the adopted name, in italics. The tabular arrangement has been adopted to obviate the necessity of repeating the names of varieties several times, as would be required if a separate Catalogue were made for several sections.

It has been decided by the Committee not to attempt, at this time, to give descriptions of the fruits recommended, but simply to indicate the season of maturity, use, and a few other particulars of importance, which require but little space. In regard to the season, it will be observed that, instead of naming the month or months in which fruits mature, the general terms "Summer," "Autumn," and "Winter," have been used; the peculiar arrangement of the Catalogue renders it impracticable to be more exact in this particular. For example: The Early Harvest Apple is reported as succeeding in almost every State and Territory in the Union, in one locality ripening in May, and in another in July, or even in August, — a difference of two months or more; and yet in every locality it is strictly an *early summer apple*.

The columns are arranged thus: First, the names of varieties; next, the season, use, etc.; and then the States or Districts, the names of which stand at the head of the columns.

The State or District in which any variety is recommended, is designated by a star (*); and in cases where a variety is recommended as being of great superiority or value in any locality, the indication is two stars, thus (**).

It being necessary to carry the column arrangement across two pages, numbers are used on the margin of each page, to prevent errors in following lines.

DIVISION FIRST.

Embracing those States north of the southern line of Virginia, Tennessee, Missouri, etc., and east of the Rocky Mountains, including the Canadas.

I.—APPLES.

Explanation of Columns.—The first column on the right of the name gives the season of maturity. The second, the particular uses for which the variety is best adapted; and the remainder the Districts in which the varieties are recommended.

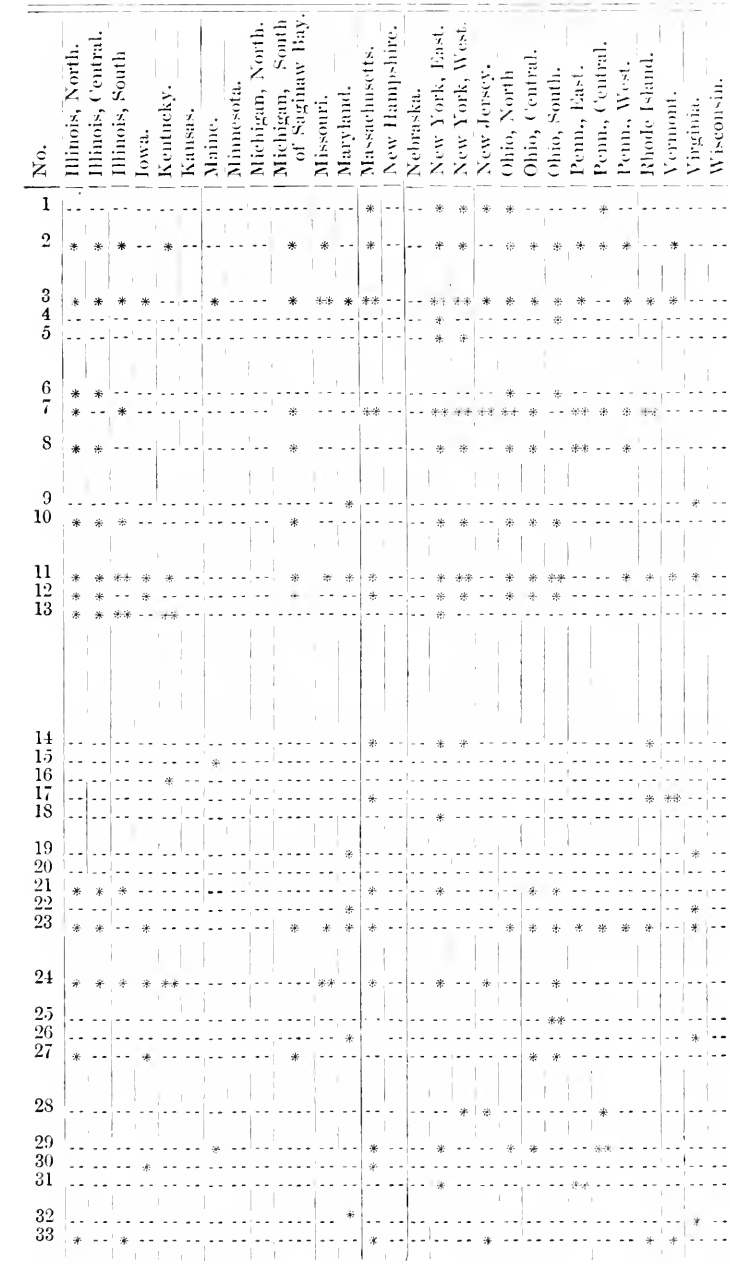
Explanation of Abbreviations.—Seasons: S. summer; A. autumn; W. winter; E. early; L. late. Those not designated as early or late of their season may be regarded as medium.

Use.—K. designates varieties recommended only for kitchen purposes. C. those specially for cider. Those not marked K. or C. may be regarded as dessert or table sorts. M. designates those most valued for market.

* Star opposite a variety indicates that such a variety succeeds well in the District named at the head of the column.

** Two stars distinguish those most highly recommended.

No.	NAME.	Season.	Use.	Canada, West.	Canada, East.	Connecticut.	Delaware.	Dist. of Columbia.	Indiana, North.	Indiana, South.
1	Alexander	E. A.	K.	*	-	-	-	-	-	-
	Emperor Alexander.									
2	American Summer Pearmain	S.	-	-	-	*	*	-	*	*
	American Summer.									
	Early Summer Pearmain.									
3	Astrachan Red	E. S.	K. M.	**	-	*	-	*	*	*
4	Ashmore	A.	-	-	-	-	-	-	-	-
5	Autumn Bough	A.	K.	-	-	*	-	-	-	-
	Late Bough.									
	Sweet Bellflower.									
6	Autumnal Swaar	A.	-	-	-	-	-	-	-	-
7	Baldwin	W.	M.	*	-	**	*	-	**	-
	Steele's Red Winter.									
8	Bailey Sweet	E. W.	-	-	-	-	-	-	*	-
	Edgerly's Sweet.									
	Patterson's Sweet.									
9	Baltimore Pippin	A.	-	-	-	-	-	-	-	-
10	Belmont	E. W.	M.	-	-	*	-	-	**	*
	Gate.									
	Waxen.									
11	Bellefleur Yellow	W.	M.	-	-	*	-	*	*	*
12	Benoni	S.	-	*	-	-	-	*	*	*
13	Ben Davis	L. W.	M.	-	-	-	-	-	**	**
	Kentucky Streak.									
	Carolina Red Streak.									
	New York Pippin.									
	Red Pippin.									
	Victoria Red.									
	Carolina Red.									
14	Beauty of Kent	W.	-	*	-	-	-	-	-	-
15	Black Oxford	W.	-	-	-	-	-	-	-	-
16	Black's Annete	S.	-	-	-	-	-	-	-	-
17	Blue Pearmain	W.	-	-	-	*	-	-	-	-
18	Bohanman	S.	-	-	-	-	-	-	-	*
	Buchanan.									
19	Bowling's Sweet	W.	K.	-	-	-	-	-	-	-
20	Bonrassa	W.	-	*	-	-	-	-	-	-
21	Broadwell	W.	K.	-	-	-	-	-	-	**
22	Brooke's Pippin	W.	-	-	-	-	-	*	-	-
23	Bullock's Pippin	W.	-	-	-	-	*	-	*	*
	American Golden Russet.									
	Sheep's Nose.									
24	Carolina Red June	E. S.	-	-	-	*	-	*	*	*
	Red June.									
25	Cannon Pearmain	L. W.	M.	-	-	-	-	*	-	*
26	Carter of Virginia	W.	-	-	-	-	-	-	-	-
27	Cooper	A.	M.	-	-	-	-	-	-	*
	Beauty Red.									
	Lady Washington.									
28	Cooper's Market	L. W.	M.	-	-	-	-	-	-	-
	Cooper's Redling.									
29	Cogswell	L. A.	M.	-	-	*	-	-	-	-
30	Cole's Quince	A.	-	-	-	-	-	-	-	-
31	Cornell's Fancy	A.	K.	-	-	-	-	-	-	-
	Cornell's Favorite.									
32	Cullasaga	L. W.	-	-	-	-	-	-	-	-
33	Danver's Winter Sweet	W.	K.	-	-	*	-	-	-	-


No.
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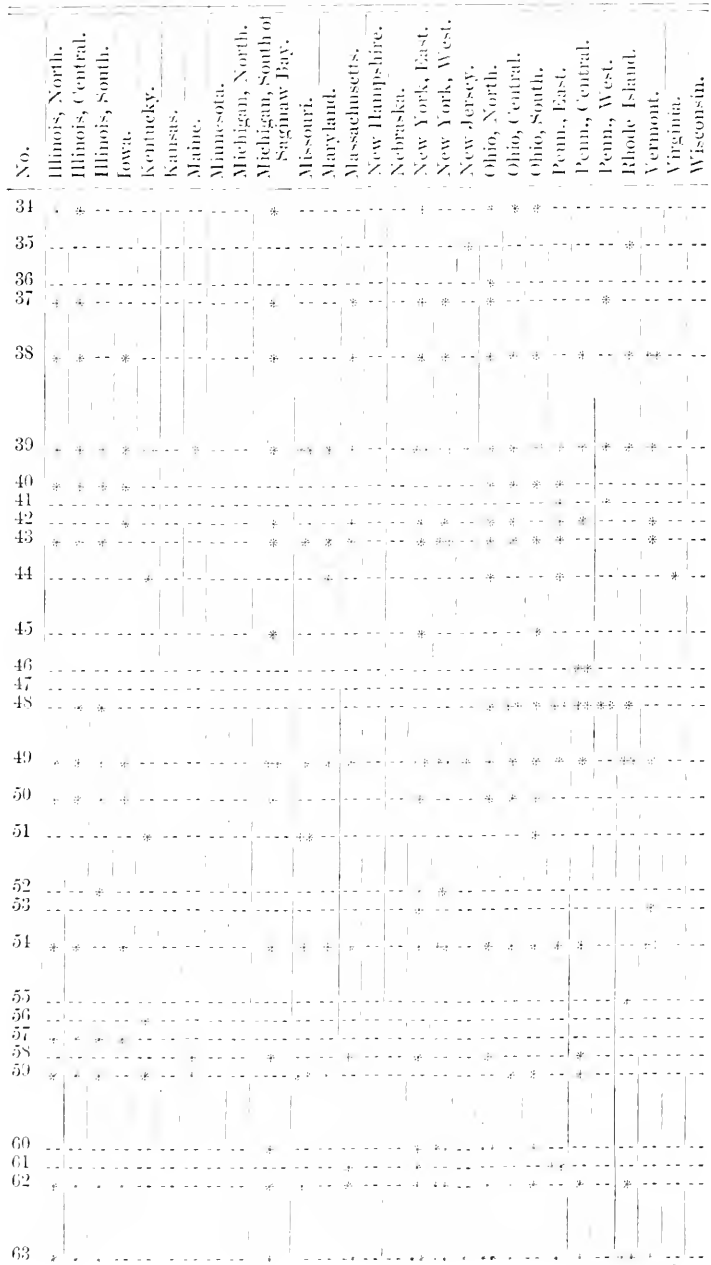
Illinois, South
Iowa.
Kentucky.
Kansas.
Maine.
Minnesota.
Michigan, North.
Michigan, South of Saginaw Bay.
Missouri.
Maryland.
Massachusetts.
New Hampshire.
Nebraska.
New York, East.
New York, West.
New Jersey.
Ohio, North
Ohio, Central.
Ohio, South.
Penn, East.
Penn, Central.
Penn, West.
Rhode Island.
Vermont.
Virginia.
Wisconsin.

No.	NAME.	Season.	Use.	Canada, West.	Canada, East.	Connecticut.	Delaware.	Dist. of Columbia.	Indiana, North.	Indiana, South.
34	Dominie	W.						*	*	*
	Wells.									
35	Drap d'Or	E. A.								--
	Early Summer Pippin.									
36	Dutch Mignonne	W.				*				--
37	Duchess of Oldenburg	E. A.	K. M.	*						*
	Borovitsky.									
	Carlowinski.									
38	Dyer, or Pomme Royal	A.								--
	Pomme Water.									
	Tompkins.									
	Spice Apple.									
	Beard Burden.									
39	Early Harvest	E. S.	M.	*		**	*	*	*	*
	Yellow Harvest.									
40	Early Pennock	S.								*
41	Early Red-Streak	S.								--
42	Early Joe	S.		*					*	*
43	Early Strawberry	S.				*	*		*	**
	American Red Juneating.									
44	Early Red Margaret	E. S.							*	--
	Red Juneating.									
	Striped Juneating.									
45	English Russet	L. W.	M.	*		**			*	*
	Poughkeepsie Russet.									
46	Ewalt	W.	K. M.							--
47	Excel	W.				*				--
48	Fallawater	W.							*	**
	Fornwalder.									
	Tulpehocken.									
49	Fall Pippin	L. A.	M.	*		*	*	*	*	**
	Holland Pippin erroneous.									
50	Fall Wine	A.							*	**
	Sharp's Spice, etc.									
51	Fall Queen of Ky.	L. A.						*		*
	Winter Queen.									
	Ladies' Favorite of Tenn.									
52	Fall Jennetting	L. A.	K. M.							--
53	Fall Orange	A.								--
	Holden Pippin.									
54	Fameuse	E. W.	M.	*		*			*	--
	Pomme de Neige.									
	Snow Apple.									
55	Fenner Sweet	W.	K.							--
56	Fenley	S.						*		--
57	Fulton	W.								--
58	Garden Royal	A.								--
59	Gilpin	W.	C.				*			*
	Cart House.									
	Red Romanite of the West.									
	Little Romanite.									
60	Golden Russet of W. N. Y.	L. W.	M.	*						--
61	Golden Russet of Mass.	W.	M.			**				--
62	Golden Sweet	E. A.	K. M.	*		*			**	**
	Orange Sweeting.									
	Trenton Early, of some Western collections.									
63	Gravenstein	E. A.		*		*		*	*	*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Ohio, Central.
Ohio, South.
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Penn., Central.
Penn., West.
Rhode Island.
Vermont.
Virginia.
Wisconsin.
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No.	NAME.	SEASON.	USE.	Canada, West.	Canada, East.	Connecticut.	Delaware.	Dist. of Columbia.	Indiana, North.	Indiana, South.
64	Green Cheese	L. W.								
65	Greeen Sweet	W.	K.							
	Honey Greening.									
66	Hawthornden	E. A.	K.	*						
67	Hartford Sweet	W.	K.			*				
68	Herefordshire Pearmain	W.								*
	Royal Pearmain.									
69	Hewes' Virginia Crab	A.	C.							
70	High-top Sweet	S.	K.			*			*	*
	Sweet June.									
	Summer Sweet.									
71	Horse Apple	S.	K.							
	Summer Horse.									
72	Hocking	S.								
73	Holland Pippin	L. S.	K.							
	Summer Pippin.									
	Pie Apple.									
74	Holladay's Seedling	W.						*		
75	Hubbardston Nonsuch	E. W	M.	*		**			*	*
76	Hurlbut	E. W.				*				
77	Jersey Sweet	E. A.	K.						*	*
78	Jonathan	W.	M.			*			**	*
	King Philip.									
79	Jefferis	E. A.								
80	Jewett's Fine Red	E. W.								
	Nodhead.									
81	Knowles' Early	S.								
82	Kane	A.						*		
	Cain.									
83	Keswick Codlin	S.	K.	*					**	*
84	King of Tompkins Co.	E. W.	M.			*			*	*
85	Large Yellow Bough	S.	K. M.	*		**	*	*	*	*
	Sweet Bough.									
	Sweet Harvest, etc.									
86	Lady Apple	W.				*	*	*		
	Pomme d'Api.									
87	Ladies' Sweet	W.	K.			*			*	
88	Late Strawberry	A.							*	
	Autumn Strawberry.									
89	Limber Twig	L. W.	M.					*		*
	James River.									
90	Lyman's Pumpkin Sweet	L. A.	K.			*				
	Pound Sweet.									
91	Lowell	A.	K. M.						*	
	Orange.									
	Tallow Apple.									
	Greasy Pippin.									
	Queen Anne.									
	Mich. Golden Pippin.									
92	Lyscom	A.								
	Osgood's Favorite.									
93	Maiden's Blush	A.	K. M.			*	*	*	**	**
94	Mackinlay	W.								
95	Manomet	A.								
96	Melon	E. W.				*			*	*
97	Minkler	W.								
98	Minister	W.				*				
99	Milam	W.								*

No.	Illinois, North.	Illinois, Central.	Illinois, South.	Iowa.	Kentucky.	Kansas.	Maine.	Minnesota.	Michigan, North.	Michigan, South of Saginaw Bay.	Missouri.	Maryland.	Massachusetts.	New Hampshire.	Nebraska.	New York, East.	New York, West.	New Jersey.	Ohio, North.	Ohio, Central.	Ohio, South.	Penn., East.	Penn., Central.	Penn., West.	Rhode Island.	Vermont.	Virginia.	Wisconsin.
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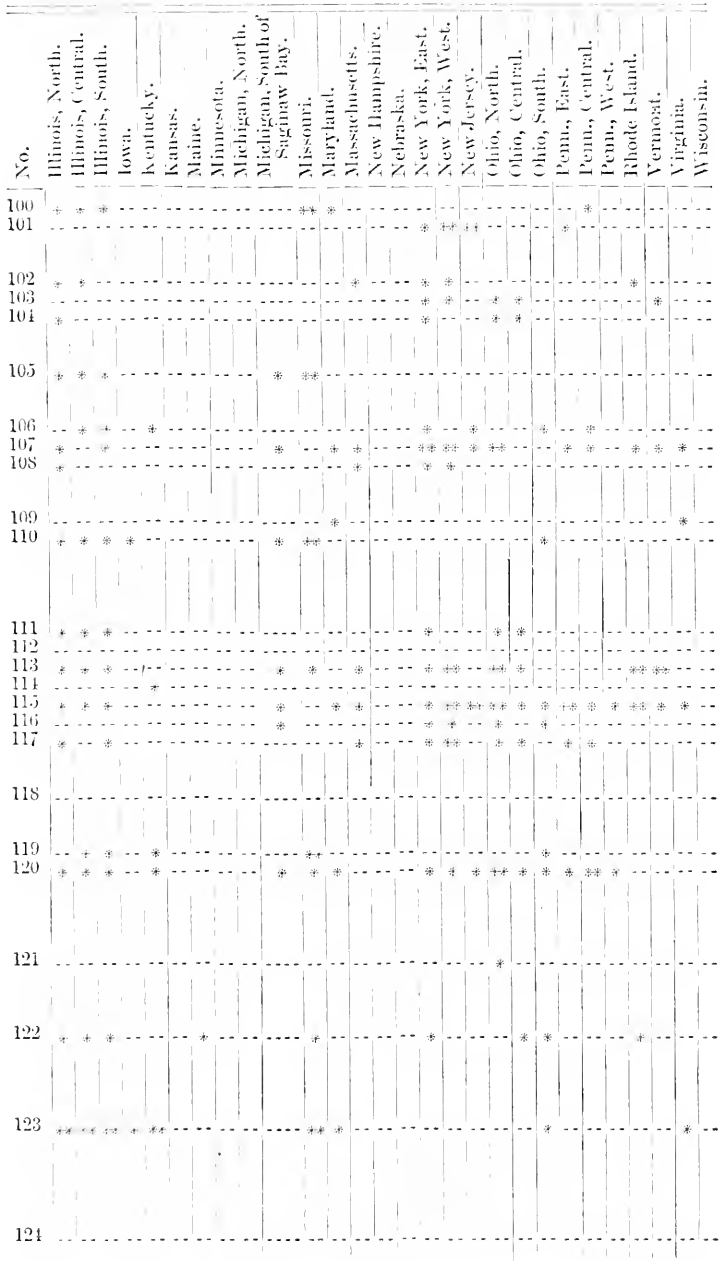
No.	NAME.	SEASON.	USE.	Canada, West.	Canada, East.	Connecticut.	Delaware.	Dist. of Columbia.	Indiana, North.	Indiana, South.
100	Michael Henry Pippin	L. W.								
101	Monmouth Pippin *Red Cheek Pippin.*	L. W.	M.			*				
102	Mother	E. W.							*	*
103	Munson Sweet	A.	K.							
104	Myers's Nonpareil *Ohio Nonpareil.*	A.								*
105	Newtown Pippin *Green Newtown Pippin.*	L. W.								*
106	Newtown Pippin Yellow	L. W.					*		*	*
107	Northern Spy	L. W.	M.	*		*			**	*
108	Northern Sweet *Northern Golden Sweet.*	A.	K.							
109	Oglesby	W.								
110	Ortley *White Bellflower.* *White Detroit.* *Woolman's Long.*	W.	M.							*
111	Paradise Winter Sweet	W.	K.						*	
112	Paragon	A.	K.							
113	Peck's Pleasant	W.		*		*			**	**
114	Pennsylvania Red Streak	W.								
115	Porter	A.	M.			*				
116	Pomme Grise	L. W.		*						*
117	Primate *Rough and Ready.*	L. S.				*			*	*
118	Progress *Esquire Miller's Best.*	W.				**				
119	Pryor's Red	W.	M.					*		*
120	Rambo *Romanite,* *Seek-no-further,* } *of N. J.* *Bread-and-Cheese Apple,* }	W.		*		*	*	*	**	**
121	Rambour Franc *Summer Rambo.* *Rambour d'Eté.*	S.	K.							
122	Ramsdell's Sweet *Ramsdell's Red Pumpkin Sweet.* *Red Pumpkin Sweet.* *English Sweet.*	W.	K.			*			*	
123	Rawles's Janet *Nevertail.* *Jannetting.* *Rockremain.* *Rockrimmon.*	L. W.	M.					*	*	**
124	Republican Pippin	A.								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Rhode Island.
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Virginia.
Wisconsin.
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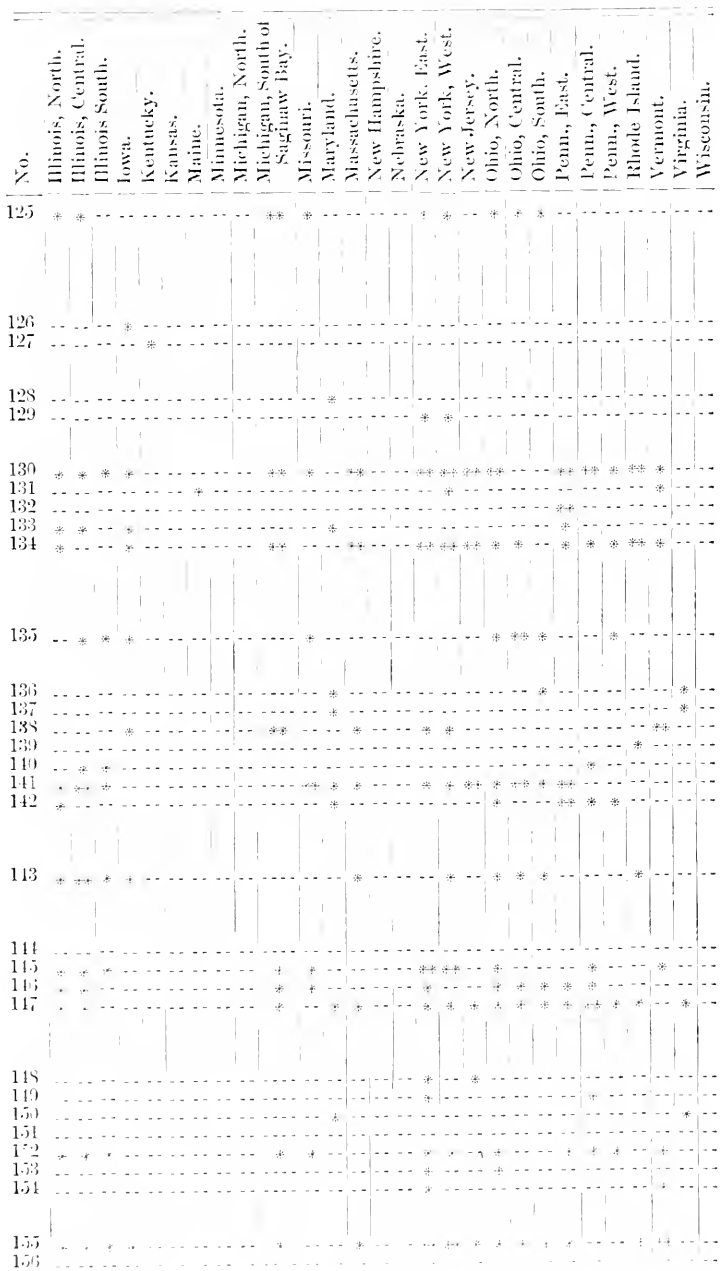
No.	NAME.	Season.	Use.	Canada, West.	Canada East.	Connecticut.	Delaware.	Dist. of Columbia.	Indiana, North.	Indiana, South.
125	Red Canada	W.		*					*	
	Old Nonsuch of Mass.									
	Richfield Nonsuch.									
	Steele's Red Winter, of some collections in Mich.									
126	Red Ingestrie	A.								
127	Red Sweet	W.	K.							
	Red Winter Sweet.									
128	Red Cathead	W.								
129	Reinette Canada	W.		*						
	Canada Reinette.									
130	Rhode Island Greening	W.	M.	*		**			*	
131	Ribston Pippin	E. W.		*						
132	Ridge Pippin	L. W.	M.							
133	Roman Stem	W.								
134	Roxbury Russet	L. W.	M.	*		**			*	
	Boston Russett.									
	Putnam Russett, of some Western collections.									
135	Rome Beauty	W.	M.						*	**
	Gillett's Seedling.									
136	Robey's Seedling	W.								
137	Robertson's White	E. W.								
138	Saint Lawrence	A.		*					*	*
139	Sheppard's Sweet	A.	K.							
140	Sine qua non	S.								
141	Smith's Cider	W.	K. M.			*	*	*	**	**
142	Smoke-house	E. W.	M.				*	*		
	Mill Creek Vandevere.									
	English Vandevere.									
143	Sops of Wine	S.	K.							
	Pie Apple.									
	Washington.									
144	Spice Sweet	A.	K.						*	
145	Spitzenburg Esopus	W.	M.	*		*			*	*
146	Summer Queen	S.							*	*
147	Summer Rose	S.				*	*	*		*
	Woolman's Harvest.									
	Lippincot.									
148	Summer Hagloe	L. S.	K.							
149	Summer Sweet Paradise	S.	K.						*	*
150	Strawn's Seedling	W.								
151	Swain	A.						*		
152	Swaar	W.				*			*	*
153	Tetofsky	S.								
154	Tinmouth	W.								
	Teignmouth.									
155	Tolman's Sweeting	W.	K. M.	*		*			*	*
156	Towne	A.								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New York, East.
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New Jersey.
Ohio, North.
Ohio, Central.
Ohio, South.
Penn., East.
Penn., Central.
Penn., West.
Rhode Island.
Vermont.
Virginia.
Wisconsin.
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No.	NAME.	SEASON.	USE.	Canada, West.	Canada, East.	Connecticut.	Delaware.	Dist. of Columbia.	Indiana, North.	Indiana, South.
157	Townsend	E. A.								
158	Twenty Ounce Apple *Eighteen Ounce Apple.* *Cayuga Streak.*	E. W.	M.			*				**
159	Vandevere, of N.Y. *Newtown Spitzenburg.* *Ox Eye.* *Joe Berry.*	W.	M.			*	*		*	
160	Wagener	W.	M.		*				**	**
161	Waugh's Crab	W.	C.							
162	Watch Willow	L. W.								
163	Wellford's Yellow	W.								
164	Westfield Seek-no-further *Conn. Seek-no-further.* *Seek-no-further.*	W.	M.			*			*	*
165	White Juneating *Juneating.*	S.				*				*
166	White Pippin *Canada Pippin.*	L. W.	M.						*	**
167	White Winter Pearmain	L. W.	M.						*	**
168	White Rambo	A.								
169	Wine Sap *Wine Sop.*	L. W.	M.			*	*	*	**	**
170	Willow Twig	L. W.	M.							*
171	Williams' Favorite	S.				*			*	
172	Wine Apple or Hays	W.	M.			*	*	*		
173	Yellow Ingestrie	A.								
174	Yellow June *Kirkbridge White, of Downing.*	S.								

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157	--	--	--	--	*	--	--	--	--	--	--	--	--	--	--	*	--	--	--	--	--	*	**	*	--	--	--	--
158	*	--	--	--	--	--	--	--	--	*	--	--	*	--	--	*	**	--	*	--	--	--	--	--	--	--	--	--
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II.—PEARS.

The Columns indicate—1st. The Season; 2d. Use; 3d. Stock; and the remainder the Districts in which the varieties are recommended.

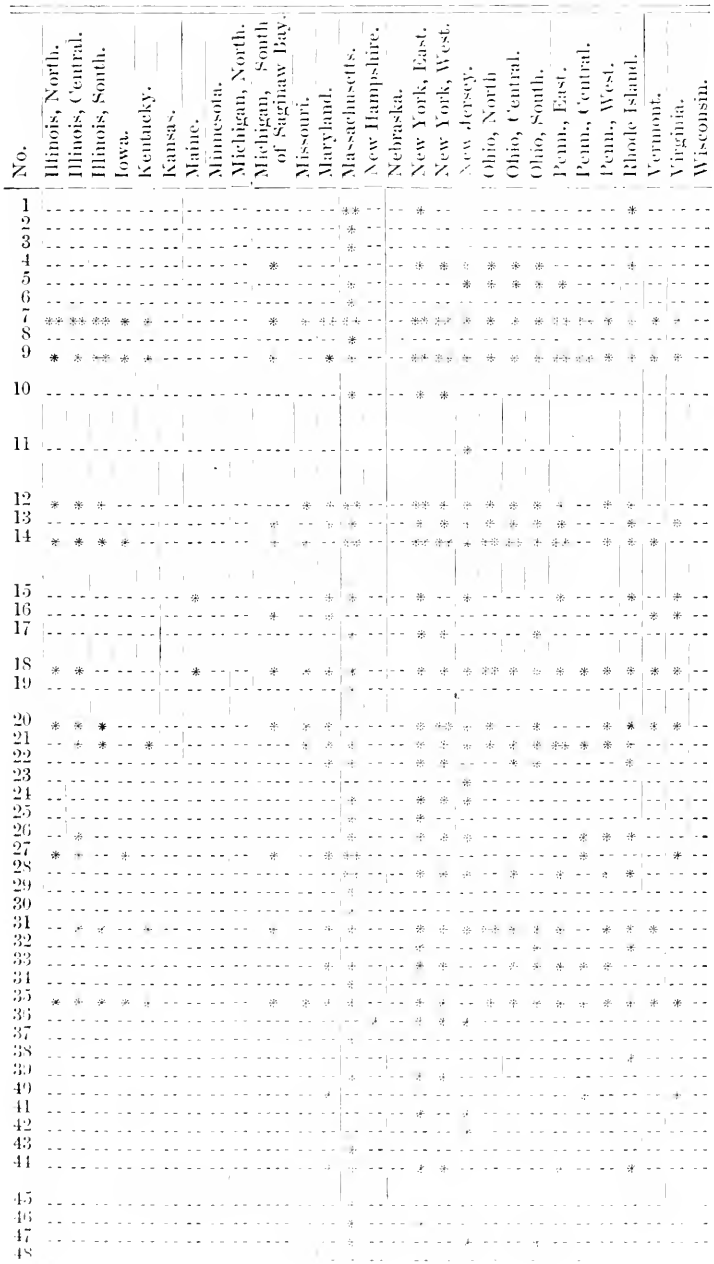
The abbreviations are—

Season.—S. summer; A. autumn; W. winter; E. early; L. late.

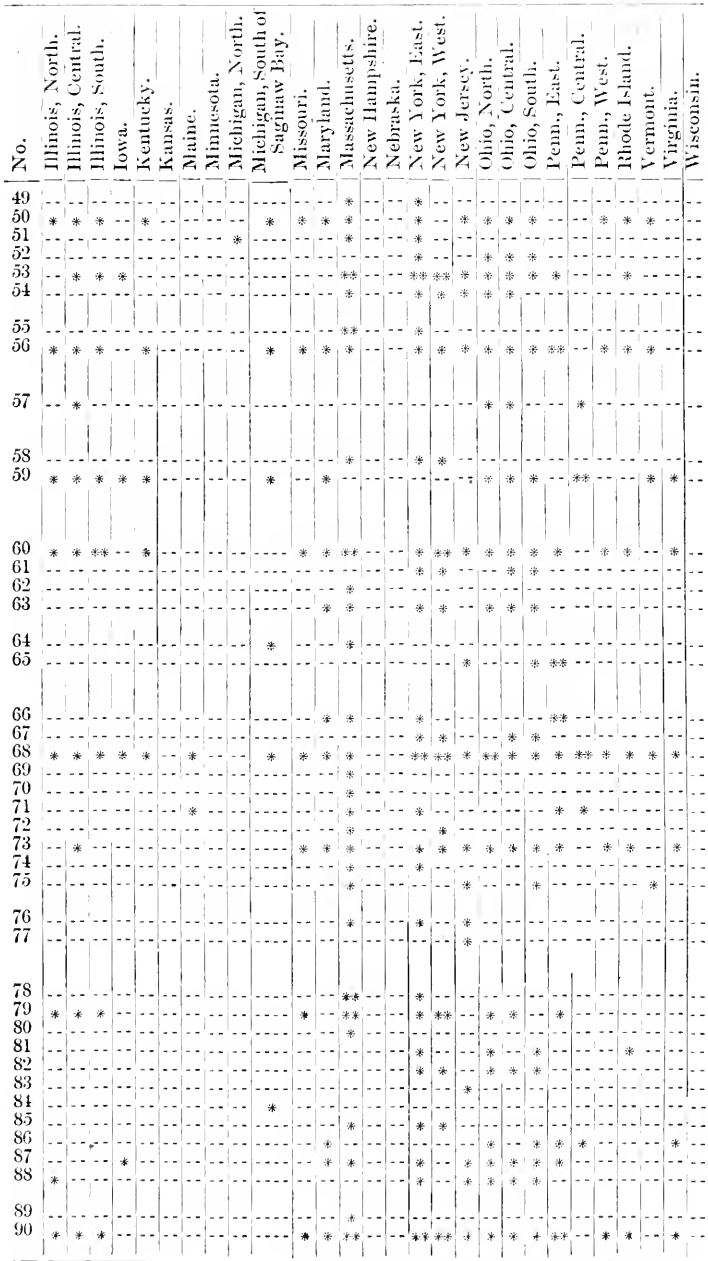
Use—K. denotes those recommended *only* for kitchen purposes; M. those most profitable for market.

Stock.—Q. those which are known to succeed well on the Quince stock.

No.	NAME.	SEASON.	USE.	STOCK.	Canada, West.	Canada, East.	Connecticut.	Delaware.	Dist. of Columbia.	Indiana, North.	Indiana, South.
1	Abbott	A.									
2	Adams	E. A.									
3	Alexandrina	E. A.									
4	Ananas d'Eté	E. A.									
5	Andrews	E. A.									
6	Augustus Dana										
7	Bartlett or Williams' Bonchretien	E. A.	M.		*		*	*		**	**
8	Baronne de Mello										
9	Belle Lucrative *Fondante d'Automne.*	E. A.		Q.	*		*	*		**	**
10	Belle Epine Dumas *Epine Dumas.* *Due de Bordeaux, etc.*	E. W.					*	*			
11	Beurré Benoist *Auguste Benoit.* *Benoits.*	A.						*			
12	Benrré Bosc	A.					*	*			
13	Beurré Clairgeau	L. A.	M.				*				
14	Beurré d'Anjou *Ne plus Meuris, of the French.*	L. A.	M.	Q.	*		*			*	*
15	Beurré d'Amanlis	E. A.		Q.			*				
16	Beurré d'Aremberg	E. W.									
17	Beurré de Brignais *Des Nonnes.*	A.									
18	Benrré Diel	A.	M.	Q.	*		*			*	*
19	Beurré de Nantes *Nantais.*	A.									
20	Beurré Easter	W.	M.	Q.			*			*	*
21	Beurré Gifiard	E. S.					*			*	*
22	Beurré Golden of Bilboa	A.									
23	Beurré Goubault	E. A.						*			
24	Beurré Hardy	A.		Q.			*				
25	Beurré Kennes	A.									
26	Beurré Langelier	L. A.		Q.			*				
27	Beurré Oswego	A.			*						
28	Beurré Superfin	A.		Q.			*				
29	Bezi de la Motte	L. A.									
30	Black Worcester	L. W.									
31	Bloodgood	S.			*		*	*		*	*
32	Bonne d'Ezee	A.									
33	Brandywine	E. A.		Q.			*	*			
34	Brialmont										
35	Buffum	A.	M.	Q.	*		*	*		*	*
36	Cabot	E. A.									
37	Caen de France										
38	Capsheaf	A.									
39	Catillac	W.	K.	Q.							
40	Catinka	L. A.									
41	Chancellor	L. A.					*				
42	Chelmsford	A.	K.								
43	Clapp's Favorite										
44	Columbia *Columbian Virgalieu.*	E. W.			*						
45	Cornelis										
46	Conseiller de la Cour	L. A.									
47	Cushing	A.									
48	Dallas										


No.
Illinois, North.
Illinois, Central.
Illinois, South.
Iowa.
Kentucky.
Kansas.
Maine.
Minnesota.
Michigan, North.
Michigan, South of Saginaw Bay.
Missouri.
Maryland.
Massachusetts.
New Hampshire.
Nebraska.
New York, East.
New York, West.
New Jersey.
Ohio, North
Ohio, Central.
Ohio, South.
Penn., East.
Penn., Central.
Penn., West.
Rhode Island.
Vermont.
Virginia.
Wisconsin.

No.	NAME.	Season.	Use.	Stock.	Canada, West.	Canada, East.	Connecticut.	Delaware.	Dist. of Columbia.	Indiana, North.	Indiana, South.
49	D'Albret	A.									
50	Dearborn's Seedling	S.					*	*		*	*
51	Delices d'Hardenpont d'Angers	L. A.									
52	Dix	A.									
53	Doyenné Boussock	E. A.	M.				*	*			
54	Doyenné d'Alençon	L. W.		Q.			*				
	Doyenne d'Hiver Nouveau.										
55	Doyenné du Comice	L. A.									
56	Doyenné d'Eté	E. S.					*	*	*	*	*
	Doyenne de Juillet.										
	Summer Doyenne.										
57	Doyenné Gray	A.								*	*
	Doyenne Gris.										
	Red Doyenne.										
58	Doyenné Robin	A.						*			
59	Doyenné White	A.	M.	Q.	*					*	**
	St. Michael.										
	Virgalieu.										
	Butter Pear.										
60	Duchesse d'Angouleme	L. A.	M.	Q.	*		*			*	*
61	Duchesse de Berri d'Eté	S.									
62	Duchesse de Brabant	A.									
63	Duchesse d'Orleans	A.									
	Beurré St. Nicholas.										
64	Dunmore	A.									
65	Early Rousselet	S.								*	*
	Early Catherine.										
	Rousselet Hatif.										
66	Elizabeth, Manning's	S.									
67	Figue d'Alençon	E. W.		Q.			*				
68	Flemish Beauty	A.	M.		*		*	*		**	**
69	Emile de Heyst										
70	Frederick of Wirtemburg	A.									
71	Fulton	A.									
72	Gansel's Bergamot	A.									
73	Glout Morceau	E. W.		Q.	*		*			*	*
74	Hanners	A.									
75	Heatheot	A.									
	Gore's Heathcot.										
76	Henkel	A.									
77	Henry the Fourth	A.		Q.							
	Ananas.										
	Poire Ananas, etc.										
78	Hovey, Dana's	L. A.									
79	Howell	A.	M.	Q.							
80	Hull	A.									
81	Jalousie de Fontenay Vendée	A.					*				
82	Jaminette	W.		Q.							
83	Jean de Witte	E. W.						*			
84	Johonnot	A.									
85	Josephine de Malines	L. W.									
86	Julienne	S.						*			
87	Kingsessing	A.									
88	Kirtland	E. A.								*	*
	Kirtland's Seekel.										
89	Knight's R. I. Seedling	A.									
90	Lawrence	E. W.	M.				*	*		*	*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New York, East.
New York, West.
New Jersey.
Ohio, North.
Ohio, Central.
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Penn., East.
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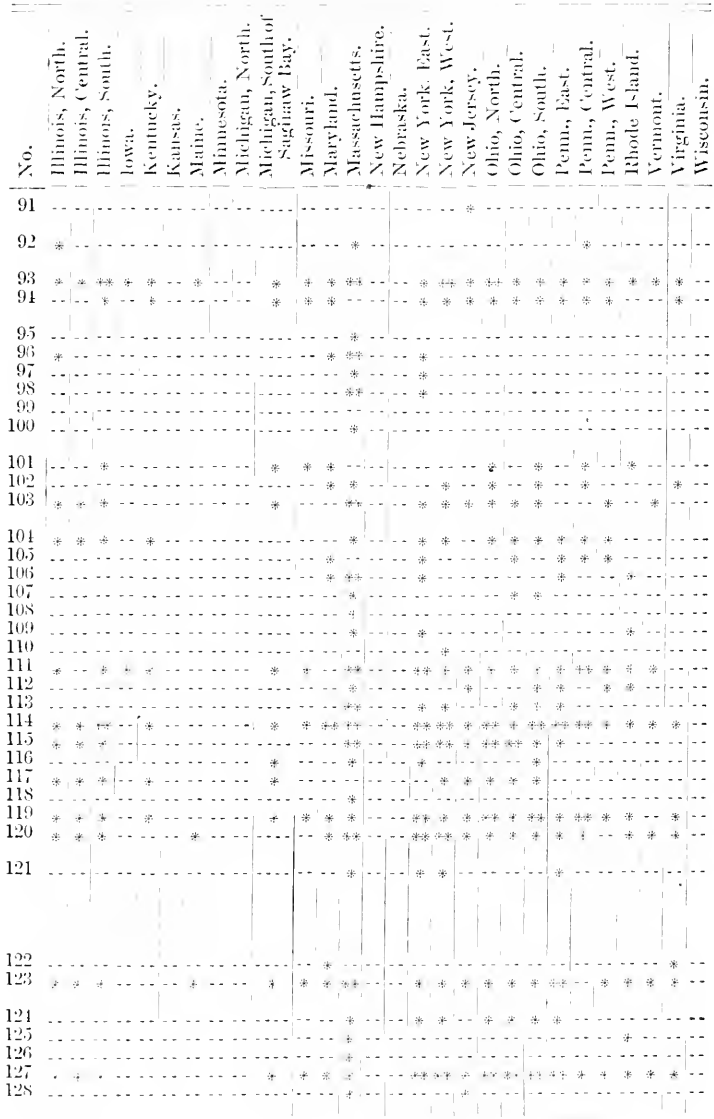
No.	NAME.	SEASON.	USE.	STOCK.	Canada, West.	Canada, East.	Connecticut.	Delaware.	Dist. of Columbia.	Indiana, North.	Indiana, South.
91	Limon	S.									
	Beurre Haggerston.										
92	Lodge	A.						*			
	Smith's Bordenave.										
93	Louise Bonne de Jersey	E. A.	M.	Q.	*		*	*		*	*
94	Madeleine	E. S.					*	*		*	*
	Citron des Carmes.										
95	Madame Eliza										
96	Marie Louise	A.									
97	McLaughlin	E. W.									
98	Merriam	A.									
99	Moyamensing	E. A.									
100	Moore's	A.									
	Moore's Pound.										
101	Napoleon	L. A.		Q.			*				
102	Nouveau Poiteau	L. A.		Q.			*				
103	Onondaga	A.	M.		*		*			*	*
	Swan's Orange.										
104	Osband's Summer	S.									
105	Ott	L. S.					*	*			
106	Paradise d'Automne	A.					*	*			
107	Passe Colmar	E. W.								*	*
108	Pinneo, or Boston	S.									
109	Pratt	A.									
110	Rousselet Stuttgart	S.		Q.							
111	Rostiezer	S.					*				
112	St. Ghislan	E. A.								*	*
113	St. Michel-Archange	A.					*				
114	Seckel	A.	M.		*		*	*		**	**
115	Sheldon	A.	M.							*	*
116	Sterling	L. S.		Q.							
117	Stevens' Genesee	E. A.			*					*	*
118	Supreme de Quimper	S.									
119	Tyson	S.			*		*	*		*	*
120	Urbaniste	A.	M.	Q.			*	*		*	*
	Beurre Picquery.										
121	Uvedale's St. Germain	L. W.	K.				*				
	Pound.										
	Winter Bell.										
	Angora.										
	Bolivar, etc.										
122	Van Mons Leon le Clerc	L. A.									
123	Vicar of Winkfield	E. W.	M.	Q.	*		*			*	*
	Le Cure.										
124	Washington	E. A.								*	*
125	Wilbur	E. A.									
126	Willermoiz										
127	Winter Nelis	E. W.			*		*			*	*
128	Windsor	S.	K.		*						
	Summer Bell, etc.										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III. — CHERRIES.

The columns explain — 1st. The season of maturity; 2d. The class to which the variety belongs; and the remainder the Districts in which the varieties are recommended.

The abbreviations are —

Season. — E. early, as Early Purple Guigne, Belle d'Orleans, Kentish, etc., which usually ripen at Rochester, lat. 43 deg., from the 10th to 20th of June, according to the season. M. medium season, those ripening between 20th of June and 20th of July; and L. late, those ripening after that time.

Class. — H. hearts, or tender-fleshed, sweet cherries, such as Black-Heart or Gov. Wood. B. bigarreau or firm-fleshed, sweet cherries, like Graffion, Napoleon, etc. D. dukes, having more or less acidity, as May Duke. M. Morellos, having generally acid fruit, used chiefly for kitchen or confectionery purposes.

No.	NAME.	Season.	Class.	Canada, West.	Canada East.	Connecticut.	Delaware.	Dist. of Columbia.	Indiana, North.	Indiana, South.
1	American Amber	M.	H.							
2	American Heart	M.	H.							
3	Bauman's May	E.	H.							
	May Bigarreau.									
4	Belle d'Orleans	E.	H.			*		*		
5	Belle de Choisy	M.	D.					*	*	*
6	Belle Magnifique	L.	D.					*	*	*
7	Bigarreau, or Graffion	M.	B.					*	*	*
	Yellow Spanish.									
	White Bigarreau, of some.									
8	Black Bigarreau (new)									
9	Black Eagle	M.	H.			*			*	*
10	Black Heart	M.	H.							
11	Black Tartarian	M.	H.			*		*		
12	Buttner's October Morello	L.	M.							
13	Carnation	L.	M.						*	*
14	Champagne (Downing)	M.	H.							
15	Cleveland Bigarreau (K)	M.	H.							
16	Coe's Transparent	M.	H.			*		*		
17	Donna Maria	L.	M.						*	*
18	Downer's Late	L.	H.			*				
19	Downton	M.	H.							
20	Early Purple Guigne	E.	H.						*	*
21	Elton	M.	H.					*	*	*
22	Great Bigarreau, of Downing	M.	B.							
23	Guigne Noir Lusante	L.	D.							
24	Governor Wood	M.	H.			*		*	*	*
25	Hovey	M.	B.							
26	Jeffrey's Duke	M.	D.							
	Royale.									
27	Kentish	E.	M.	*		*			*	*
	Early Richmond.									
	Virginian May.									
28	Knight's Early Black	M.	H.			*		*	*	*
29	Late Duke	L.	D.							
30	Louis Philippe	L.	M.							
31	May Duke	M.	D.	*		*		*	*	*
32	Monstreuse de Mezel	M.	B.					*		
	Great Bigarreau of Mezel.									
	Bigarreau of Gonbalis, etc.									
33	Morello	L.	M.	*					*	*
	English Morello.									
	Large Morello, etc.									
34	Napoleon Bigarreau	M.	B.			*		*		
	Holland Bigarreau.									
	Bigarreau d'Esperin.									
35	Osceola	M.	B.							
36	Plumstone Morello	L.	M.							
37	Red Jacket (K)	M.	H.							
38	Reine Hortense			*				*	*	*
39	Rockport Bigarreau (K)	M.	B.							
40	Sparhawk's Honey									
41	Tecumseh (K)	L.	H.							
42	Tradescant's Black Heart	L.	B.							
	Elkhorn.									
	Large Black Bigarreau.									
43	White French Guigne	M.	H.							

No.	Illinois, North.	Illinois, Central.	Illinois, South.	Iowa.	Kentucky.	Kansas.	Maine.	Minnesota.	Michigan, North.	Michigan, South of Saginaw Bay.	Missouri.	Maryland.	Massachusetts.	New Hampshire.	Nebraska.	New York, East.	New York, West.	New Jersey.	Ohio, North.	Ohio, Central.	Ohio, South.	Penn., East.	Penn., Central.	Penn., West.	Rhode Island.	Vermont.	Virginia.	Wisconsin.
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IV. — PEACHES.

The columns explain:

1st. The class, as Freestone or Clingstone, to which the variety belongs.

2d. The color of the flesh.

3d. The season of maturity; as Early, Medium, or Late. Those designated as Early, ripen in lat. 43 deg., previous to or about Sept. 1st. Medium, those ripening from 1st to 15th of Sept.; and Late, those after that period. A few of the very early and very late are so designated. The remaining columns denote the Districts in which the varieties are recommended.

Abbreviations:

Class. — F. freestone; C. clingstone.

Flesh. — W. white, or pale-colored flesh; Y. yellow, or yellowish flesh.

Season. — E. early; V. E. very early; M. medium; L. late; V. L. very late.

No.	NAME.	Class, Free or Cling.	Color of Flesh.	Season.	Canada, West.	Canada, East.	Connecticut.	Delaware.	Dist. of Columbia	Indiana, North.	Indiana, South.
1	Barnard	F.	Y.	M.	--	--	--	--	--	--	*
	Early Barnard.										
	Yellow Barnard.										
2	Barrington										
3	Bellegarde	F.	W.	M.	--	--	--	--	--	--	*
4	Bergen's Yellow	F.	Y.	M.	--	--	--	--	--	--	--
5	Cambridge Belle	F.	W.	M.	--	--	--	--	--	--	--
6	Carpenter's White	F.	W.	L.	--	--	--	--	--	--	--
7	Cole's Early Red	F.	W.	E.	--	--	--	--	*	--	--
8	Columbia	F.	Y.	M.	--	--	--	--	--	*	*
9	Coolidge's Favorite	F.	W.	E.	--	--	--	--	*	--	*
10	Crawford's Early Melocoton	F.	Y.	E.	--	--	--	*	*	*	**
11	Crawford's Late Melocoton	F.	Y.	L.	--	--	--	*	*	*	**
12	Druid Hill	F.	W.	L.	--	--	--	--	*	--	*
13	Early Newington Freestone	F.	W.	E.	--	--	--	--	--	--	--
14	Early Slocum	F.	W.	E.	--	--	--	--	--	--	--
15	Early Tillotson	F.	W.	V. E.	--	--	--	--	--	--	*
16	Early York	F.	W.	V. E.	--	--	--	*	*	*	*
	Serrate Early York.										
	Early Purple.										
17	Fay's Early Ann	F.	W.	V. E.	--	--	--	--	--	*	--
18	George the Fourth	F.	W.	E.	--	--	--	*	*	*	--
19	Grand Admirable	C.	W.	L.	--	--	--	--	--	*	*
20	Grosse Mignonne	F.	W.	E.	--	--	--	--	*	*	*
21	Haines' Early Red	F.	W.	E.	--	--	--	--	*	--	--
22	Hales' Early (from Ohio)	F.	W.	V. E.	--	--	--	--	--	--	--
23	Heath Cling	C.	W.	L.	--	--	--	*	*	**	**
24	Hill's Madeira	F.	Y.	M.	--	--	--	--	--	--	--
	Madeira Freestone.										
25	Hyslop Cling	C.	W.	V. L.	--	--	--	--	--	--	--
26	Jacques	F.	Y.	M.	--	--	--	--	--	--	--
27	Kenrick's Heath	F.	W.	V. L.	--	--	--	--	*	--	--
	Heath Freestone.										
28	La Grange	F.	W.	V. L.	--	--	--	--	*	--	**
29	Large Early York	F.	W.	E.	--	--	--	*	*	*	*
30	Large White Cling	C.	W.	M.	--	--	--	--	*	--	--
31	Late Red Rare-ripe	F.	W.	M.	--	--	--	*	--	--	--
32	Lemon Cling	C.	Y.	L.	--	--	--	--	--	*	*
33	Leopold Cling									*	*
34	Malta	F.	W.	M.	--	--	--	--	--	*	*
35	Molden's White	F.	W.	L.	--	--	--	--	--	--	--
36	Morris' White	F.	W.	M.	--	--	--	*	*	*	**
37	Noblesse	F.	W.	M.	--	--	--	--	--	--	--
38	Old Mixon Free	F.	W.	L.	--	--	--	*	*	*	*
39	Old Mixon Cling	C.	W.	L.	--	--	--	*	*	**	**
40	President										
41	Red Cheek Melocoton										
42	Rodman's Cling	C.	W.	V. L.	--	--	--	*	--	*	*
	Red Cling.										
43	Royal George	F.	W.	E.	--	--	--	--	--	*	--
44	Scott's Nonpareil	F.	Y.	L.	--	--	--	--	*	--	--
45	Smock Freestone	F.	Y.	L.	--	--	--	*	*	*	*
46	Snow	F.	W.	M.	--	--	--	--	--	--	--
47	Stump the World	F.	W.	L.	--	--	--	--	--	--	*
48	Sturtevant, of Ohio	F.	Y.	M.	--	--	--	--	--	--	--
49	Susquehanna	F.	Y.	M.	--	--	--	--	--	--	--
50	Tippecanoe Cling	C.	Y.	L.	--	--	--	--	--	--	--

No.	Illinois, North.	Illinois, Central.	Illinois, South.	Iowa.	Kentucky.	Kansas.	Maine.	Minnesota.	Michigan, North.	Michigan, South of Saginaw Bay.	Missouri.	Maryland.	Massachusetts.	New Hampshire.	Nebraska.	New York, East.	New York, West.	New Jersey.	Ohio, North.	Ohio, Central.	Ohio, South.	Penn., East.	Penn., Central.	Penn., West.	Rhode Island.	Vermont.	Virginia.	Wisconsin.
1	*	*	-	-	-	-	-	-	-	*	-	-	-	-	-	-	-	-	*	*	*	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	*	-	-	-	-	-	-	-	*	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*	-	-	-	-	-	-	-	-	-	-
4	-	-	*	*	-	-	-	-	-	-	*	-	*	-	*	-	-	-	*	*	-	-	*	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	*	*	-	-	-	-	-	-	*	-	-	-	-	*	-	-	*	*	*	-	-	-	-	-	-	-	-
8	-	-	*	-	*	-	-	-	-	-	-	-	-	-	*	-	-	-	*	-	*	-	-	-	-	-	-	-
9	*	*	*	-	-	-	-	-	-	-	-	-	*	-	*	-	-	-	*	*	-	*	*	*	-	-	-	-
10	*	*	*	-	-	-	-	-	-	*	*	*	-	-	*	*	-	-	*	*	*	*	*	*	-	-	-	-
11	*	*	*	-	*	-	-	-	-	*	*	*	*	-	*	*	-	-	*	*	*	*	*	*	-	-	-	-
12	-	*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*	-	-	-	-	-	-	-
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15	-	*	*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	*	*	-	-	-	-	-	-	*	*	-	*	-	*	*	*	*	*	*	*	-	-	-	*	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*	-	-	-	-	-	-	-	-	-	-	-
18	-	*	-	-	-	-	-	-	-	-	*	-	*	-	-	*	-	*	*	-	*	*	*	*	*	-	-	-
19	-	-	-	-	*	-	-	-	-	-	*	-	-	-	-	-	-	-	-	-	*	-	-	-	-	-	-	-
20	-	*	*	-	-	-	-	-	-	*	-	-	*	-	*	*	*	*	*	*	*	*	-	-	*	-	-	-
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23	-	*	*	-	*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
36	-	-	-	-	*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
37	*	*	-	-	-	-	-	-	-	-	-	-	*	-	-	-	-	*	-	-	-	-	-	*	-	-	-	-
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39	*	*	*	-	-	-	-	-	-	*	-	-	*	-	-	*	-	*	*	*	*	*	*	*	*	-	-	-
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41	-	-	-	*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
43	-	-	-	-	*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*	-	-	-	-	-	-	-	-	-	-	-	-
45	-	*	*	*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
46	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
47	*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
49	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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No.	NAME.	Class, Free or Cling.	Color of Flesh.	Season.	Canada, West.	Canada, East.	Connecticut.	Delaware.	Dist. of Columbia.	Indiana, North.	Indiana, South.
51	Troth's Early	F.	W	E.					*		
52	Van Zandt's Superb	F.	W	E.							
53	Ward's Late Free	F.	W	V. L.				*		*	*
54	Ware							*			
55	White Imperial	F.	W.	E.							
56	Yellow Alberge	F.	Y.	E.							
57	Yellow Rare-ripe	F.	Y.	M.				*			

V.—NECTARINES.

Explanation of columns and abbreviations same as Peaches.

No.	NAME.	Class, Free or Cling.	Color of Flesh.	Season.	Canada, West.	Canada, East.	Connecticut.	Delaware.	Dist. of Columbia.	Indiana, North.	Indiana, South.
1	Boston	F.	Y.	M.							
2	Downton	F.	W.	M.							
3	Early Newington	C.	W.	M.							
4	Early Violet *Violet Hative.*	F.	Y.	E.						*	*
5	Elruge	F.	W.	M.						*	*
6	Stanwick	F.	W.	L.							

No.	Illinois, North.	Illinois, Central.	Illinois, South.	Iowa.	Kentucky.	Kansas.	Maine.	Minnesota.	Michigan, North.	Michigan, South of Saginaw Bay.	Missouri.	Maryland.	Massachusetts.	New Hampshire.	Nebraska.	New York, East.	New York, West.	New Jersey.	Ohio, North.	Ohio, Central.	Ohio, South.	Penn., East.	Penn., Central.	Penn., West.	Rhode Island.	Vermont.	Virginia.	Wisconsin.
51	*	*	*													*			*	*	*	*		*				
52					*					*						*												
53		*																										
54																												
55		*								*																		
56																			*	*			*					
57		*								*					*				*	*								

V.—NECTARINES.

Explanations of columns and abbreviations same as Peaches.

No.	Illinois, North.	Illinois Central.	Illinois South.	Iowa.	Kentucky.	Kansas.	Maine.	Minnesota.	Michigan, North.	Michigan, South of Saginaw Bay.	Missouri.	Maryland.	Massachusetts	New Hampshire.	Nebraska.	New York, East.	New York, West.	New Jersey.	Ohio, North.	Ohio, Central.	Ohio, South.	Penn., East.	Penn., Central.	Penn., West.	Rhode Island.	Vermont.	Virginia.	Wisconsin.
1																*	*											
2																*	*											
3																*	*											
4																*	*											
5											*	*				*	*						*					
6												*				*	*											

VI.—APRICOTS.

Explanation of columns and abbreviations same as Peaches and Nectarines.

No.	NAME.	Class, Free or Cling.	Color of Flesh.	Season.	Canada, West.	Canada, East.	Connecticut.	Delaware.	Dist. of Columbia.	Indiana, North.	Indiana, South.
1	Breda	F.	O.	M.						*	*
2	Early Golden	F.	Y.	E.							
3	Hunskirke										
4	Large Early	F.	O.	E.							
5	Large Red	F.	O.	M.							
6	Lafayette										
7	Moorpark	F.	O.	M.				*		*	*
8	Orange *Royal Orange.*	C.	O.	E.							
9	Peach	F.	Y.	M.						*	*
10	Red Masculine	F.	Y.	E.				*			
11	St. Ambroise	F.	Y.	E.							
12	Turkey	F.	Y.	L.							

VI.—APRICOTS.

Explanation of columns and abbreviations same as Peaches and Nectarines.

No.	Illinois, North.	Illinois, Central.	Illinois, South.	Iowa.	Kentucky.	Kansas.	Maine.	Minnesota.	Michigan, North.	Michigan, South of Saginaw Bay.	Missouri.	Maryland.	Massachusetts.	New Hampshire.	Nebraska.	New York, East.	New York, West.	New Jersey.	Ohio, North.	Ohio, Central.	Ohio, South.	Penn., East.	Penn., Central.	Penn., West.	Rhode Island.	Vermont.	Virginia.	Wisconsin.
1			*													*	*					*	*	*				
2		*	*								*					*	*											
3			*																*									
4			*								*	*				*	*					*		*				
5																*	*											
6												*																
7			*									*				*	*					*		*				
8																*	*											
9			*								*	*				*	*											
10																*	*											
11																*	*											
12																*	*											

VII.—PLUMS.

The columns indicate—1st. Color of Fruit; 2nd. Whether Freestone or Cling; 3d. Uses to which best adapted; 4th. Season of maturity; and the remainder the Districts in which the varieties are recommended.

The abbreviations are as follows:—

Color of Fruit.—D. dark, including all red, purple blue, and other dark-colored varieties; P. pale, including the green, yellow, etc.

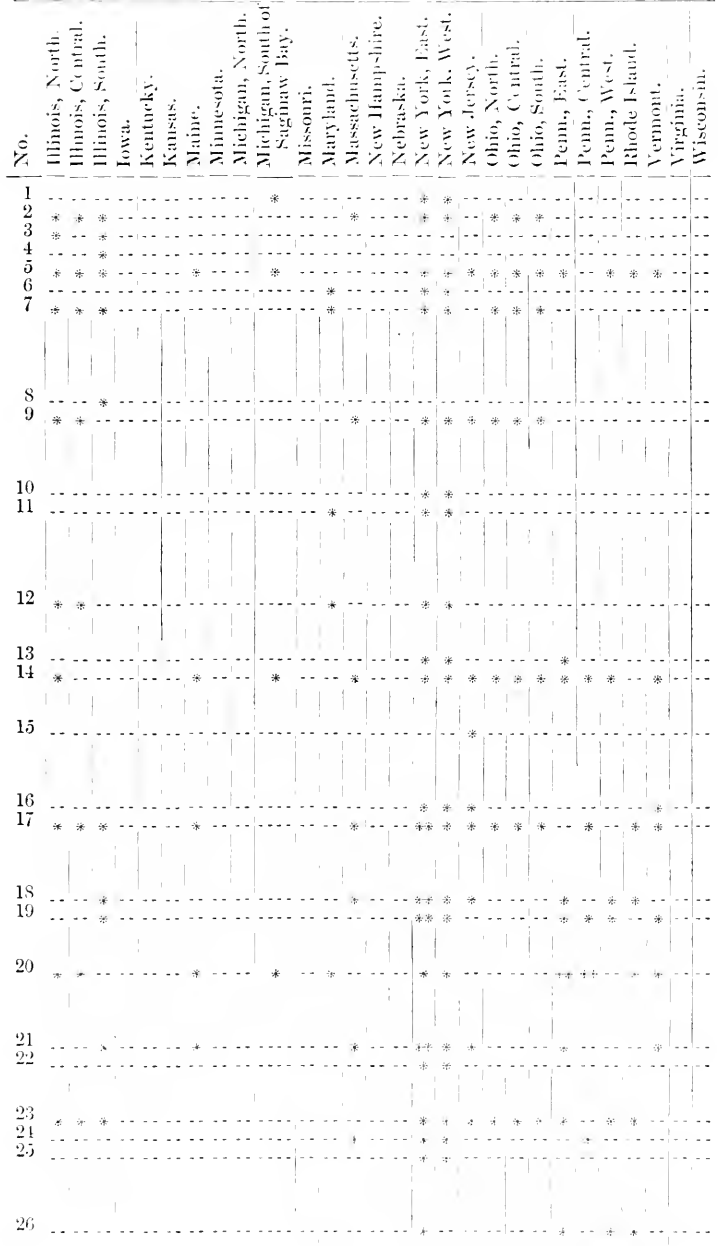
Stone.—F. freestone; C. clingstone.

Uses.—T. table; K. kitchen; D. drying; M. those most profitable for market.

Season.—E. early; M. medium; L. late; V. E. very early; V. L. very late.

The divisions of season for Peaches apply also to Plums.

No.	NAME.	Color of Fruit.	Class, Free or Cling.	Use.	Season.	Canada, West.	Canada, East.	Connecticut.	Delaware.	Dist. of Columbia	Indiana, North.	Indiana, South.
1	Bleeker's Gage											
2	Bradshaw	D.	C.	M.	E.	*						*
3	Chickasaw											
4	Coe's Late Red											
5	Coe's Golden Drop	P.	C.		L.	*		*	*		*	*
6	Columbia											
7	Damson *Common Damson.* *Black Damson.* *Blue Damson.*	D.		K.	L.	*						
8	Domine Dull											
9	Duane's Purple *Purple Magnum Bonum, Am.*	D.	C.		M.							
10	Early Favorite (Rivers)	D.	F.		V. E.							
11	Fallenberg *Italian Prune.* *Quetsche d'Italie.* *Prune d'Italie.*	D.	F.	D.	M.							
12	German Prune *Quetsche.*	D.	F.	K. & D.	M.							
13	General Hand	P.	F.		M.							
14	Green Gage *Reine Claude.*	P.	F.		E.	*		*	*		*	*
15	Goliath *Caledonian.* *Nectarine, by error.*	D.	C.	K.	M.							
16	Haling's Superb	P.	C.		E.					*		*
17	Imperial Gage *Prince's Imperial Gage.* *Flushing Gage.*	P.	F.		M.			*			*	*
18	Jefferson	P.	F.		M.	*		*			*	*
19	Lawrence's Favorite *Lawrence's Gage.*	P.	F.		M.	*		*			*	*
20	Lombard *Beekman's Scarlet.* *Bleeker's Scarlet.*	D.	C.		M.	*		*			*	*
21	McLaughlin	P.	C.		M.			*				
22	Monroe *Monroe Gage.*	P.	F.		M.						*	*
23	Orleans, Smith's	D.	C.		M.	*		*			*	*
24	Peach Plum	D.	F.		E.							
25	Prune d'Agen *D'Agen.* *Robe de Sergent.*	D.	F.		M.							
26	Purple Gage *Reine Claude Violette.*	D.	F.		M.			*				


No.
Illinois, North.
Illinois, Central.
Illinois, South.
Iowa.
Kentucky.
Kansas.
Maine.
Minnesota.
Michigan, North.
Michigan, South of Saginaw Bay.
Missouri.
Maryland.
Massachusetts.
New Hampshire.
Nebraska.
New York, East.
New York, West.
New Jersey.
Ohio, North.
Ohio, Central.
Ohio, South.
Penn., East.
Penn., Central.
Penn., West.
Rhode Island.
Vermont.
Virginia.
Wisconsin.
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No.	NAME.	Color of Fruit.	Class, Free or Cling.	Use.	Season.	Canada, West.	Canada, East.	Connecticut.	Delaware.	Dist. of Columbia.	Indiana, North.	Indiana, South.
27	Purple Favorite	D.	F.	------	E.	--	--	*	--	--	--	--
28	Reine Claude de Bavay	P.	C.	------	L.	--	--	*	--	--	--	--
29	Royale Hative	D.	C.	------	E.	--	--	--	--	--	--	--
30	Royale de Tours	D.	C.	------	E.	--	--	--	--	--	--	--
31	St. Catharine	P.	C.	------	L.	--	--	--	--	--	--	--
32	St. Martin's Quetsche	P.	F.	------	V. L.	--	--	*	--	--	--	--
33	Victoria *Alderton.* *Denyer's Victoria.*	D.	F.	K.	M.	--	--	--	--	--	--	--
34	Washington *Bolmar's.*	P.	F.	------	E.	*	--	*	*	--	*	*
35	White Magnum Bonum *Yellow Magnum Bonum.* *Yellow Egg.*	P.	C.	K.	M.	*	--	--	--	--	*	*
36	Yellow Gage (Prince's)	P.	F.	------	E.	*	--	*	--	--	--	--

VIII.—QUINCES.

No.	NAME.	Canada, West.	Canada, East.	Connecticut.	Delaware.	Dist. of Columbia.	Indiana, North.	Indiana South.
1	Orange or Apple	--	--	--	--	--	*	*
2	Portugal	--	--	--	--	--	--	--
3	Rea's Seedling *Rea's Mammoth.* *Van Slyke.*	--	--	--	--	--	--	--

| No. | | |

IX.—NATIVE GRAPES.

The columns explain—1st. The season; 2d. The color; the remainder the Districts where the varieties are recommended.

Abbreviations.—*Season:* E. early; M. medium; L. late. *Color:* B. black; R. red; W. white.

No.	NAME.	Season.	Color.	Canada, West.	Canada, East.	Connecticut.	Delaware.	Dist. of Columbia.	Indiana, North.	Indiana, South.
1	Adirondack									
2	Alvey									
3	Catawba	L.	R.				*		*	*
4	Clinton	E.	B.	*					*	*
5	Concord	E.	B.	*		*	*		*	*
6	Creveling	E.	B.							
7	Cuyahoga	L.	W.							
8	Delaware	E.	R.	*		*	*		*	*
9	Diana	M.	R.			*			*	*
10	Elsingburg	L.	B.							
11	Hartford Prolific	E.	B.	*		*				
12	Herbemont									
13	Hybrid (Allen's)	M.	W.							
14	Iona									
15	Israella									
16	Isabella	M.	B.			*	*		*	*
17	Logan	E.	B.							
18	Maxatawny	L.	W.				*			
19	Northern Muscadine	E.	R.							
20	Oporto	M.	B.							
21	Rebecca	E.	W.				*			
22	Rogers's, No. 1									
23	" " 3									
24	" " 4									
25	" " 9									
26	" " 15									
27	" " 19									
28	Norton's Virginia									
29	To-Kalon	L.	B.							
30	Union Village	L.	B.							

IX.—NATIVE GRAPES.

The columns explain — 1st. The season; 2d. The color; the remainder the Districts where the varieties are recommended.

Abbreviations. — *Season:* E. early; M. medium; L. late. *Color:* B. black; R. red; W. white.

No.	Illinois, North.	Illinois, Central.	Illinois, South.	Iowa.	Kentucky.	Kansas.	Maine.	Minnesota.	Michigan, North.	Michigan, Southof Saginaw Bay.	Missouri.	Maryland.	Massachusetts.	New Hampshire.	Nebraska.	New York, East.	New York, West.	New Jersey.	Ohio, North.	Ohio, Central.	Ohio, South.	Penn., East.	Penn., Central.	Penn., West.	Rhode Island.	Vermont.	Virginia.	Wisconsin.
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X.—FOREIGN GRAPES.

As the Foreign Grapes are for cultivation under glass, they are not subject to those variations induced by climate or soil, and, therefore, they may be regarded as equally adapted to all localities. Very few of the local committees have made any report in reference to these Grapes. The list below contains such as have been already adopted by the Society, with a few others very generally esteemed.

The columns explain—1st. The color of the fruit; 2d. Flavor; 3d. Season of maturity. In flavor the only distinction is between those that are simply sweet, as the Chasselas or Hamburgs, and those having a distinct musky aroma, as the Muscats.

No.	NAME.	COLOR.	FLAVOR.	SEASON.
1	Barbarossa *Prince Albert.* *Brizzola.*	Black.	Sweet.	Very Late.
2	Black Damascus	Black.	Sweet.	Late.
3	Black Frontignan	Black.	Muscat.	Late.
4	Black Hamburg	Black.	Sweet.	Medium.
5	Black Prince	Black.	Sweet.	Medium.
6	Bowood Muscat	White.	Muscat.	Medium.
7	Buckland Sweet Water	White.	Sweet.	Medium.
8	Calabrian Raisin *Raisin de Calabre.*	White.	Sweet.	Late.
9	Cannon Hall Muscat	White.	Muscat.	Late.
10	Chasselas Musquée, or Joslin's St. Alban's *Muscat blanc Hative?*	White.	Muscat.	Early.
11	Golden Hamburg *Stockwood G. Hamburg.*	White.	Sweet.	Late.
12	Grizzly Frontignan *Red Frontignan.* *Red Constantia.*	Red and Yellow.	Muscat.	Medium.
13	Lady Down's Seedling	Black.	Sweet.	Very Late.
14	Muscat of Alexandria	White.	Muscat.	Late.
15	Muscat Hamburg	Black.	Muscat.	Medium.
16	Red Chasselas *Rose Chasselas.*	Red.	Sweet.	Medium.
17	White Nice	White.	Sweet.	Late.
18	West St. Peter's	Black.	Sweet.	Very Late.
19	Wilmot's Black Hamburg *Dutch Hamburg.*	Black.	Sweet.	Medium.
20	White Sweet Water *Dutch Sweet Water, etc.*	White.	Sweet.	Early.
21	White Frontignan *White Constantia.* *Muscat Blanc.*	White.	Muscat.	Medium.
22	Zinfindal	Black.	Sweet.	Medium.

XI. — CURRANTS.

No.	NAME.	Color.	Canada, West.	Canada, East.	Connecticut.	Delaware.	Dist. of Columbia.	Indiana, North.	Indiana, South.
1	Attractor	White.	--	--	--	--	--	--	--
2	Black Naples	Black.	*	--	--	--	--	--	--
3	Champagne	Flesh.	--	--	--	--	--	--	--
4	Cherry	Red.	*	--	*	--	*	*	*
5	Common Black *Black English.*	Black	*	--	--	--	--	--	--
6	Fertile de Palluau	Red.	--	--	*	--	*	--	--
7	Fertile d'Angers	Red.	--	--	--	*	*	--	--
8	Gondouin Red	Red.	--	--	--	--	*	--	--
9	Gondouin White	White.	--	--	--	--	*	--	--
10	Knight's Large Red	Red.	--	--	--	--	--	--	--
11	La Versaillaise	Red.	--	--	*	*	--	--	--
12	May's Victoria	Red.	*	--	*	--	--	--	--
13	Prince Albert	Red.	--	--	--	--	--	--	--
14	Red Dutch	Red.	*	--	*	--	--	*	*
15	Red Grape	Red.	--	--	--	--	--	--	--
16	Transparent White	White.	--	--	--	--	*	--	--
17	White Dutch	White.	*	--	*	--	*	*	*
18	White Grape	White.	*	--	*	--	--	*	*

XII. — GOOSEBERRIES.

No.	NAME.	Color.	Canada, West.	Canada, East.	Connecticut.	Delaware.	Dist. of Columbia.	Indiana, North.	Indiana, South.
1	American Seedling	Red.	--	--	--	--	--	--	--
2	Champagne	Red.	--	--	--	--	--	--	--
3	Crown Bob	Red.	--	--	--	--	--	--	--
4	Downing's Seedling	Green.	--	--	*	--	--	--	--
5	Early Sulphur	Yellow	--	--	--	--	--	--	--
6	Green Gage	Green.	--	--	--	--	--	--	--
7	Green Walnut	Green.	--	--	--	--	--	--	--
8	Houghton's Seedling	Red.	--	--	*	--	--	--	--
9	Ironmonger	Red.	--	--	--	--	--	--	--
10	Laurel	Green	--	--	--	--	--	--	--
11	Mountain Seedling	Red.	--	--	*	--	--	--	--
12	Warrington	Red.	--	--	--	--	--	--	--
13	Woodward's Whitesmith	White.	--	--	--	--	--	--	--

NOTE. — The varieties not recommended for any particular locality are those which have been placed on the list for "general cultivation" in the Society's Catalogue for 1860.

XI.—CURRANTS.

No.	Illinois, North.	Illinois, Central.	Illinois, South.	Iowa.	Kentucky.	Kansas.	Maine.	Minnesota.	Michigan, North.	Michigan, South of Saginaw Bay.	Missouri.	Maryland.	Massachusetts.	New Hampshire.	Nebraska.	New York, East.	New York, West.	New Jersey.	Ohio, North.	Ohio, Central.	Ohio, South.	Penn., East.	Penn., Central.	Penn., West.	Rhode Island.	Vermont.	Virginia.	Wisconsin.
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XII.—GOOSEBERRIES.

No.	Illinois, North.	Illinois, Central.	Illinois, South.	Iowa.	Kentucky.	Kansas.	Maine.	Minnesota.	Michigan, North.	Michigan, South of Saginaw Bay.	Missouri.	Maryland.	Massachusetts.	New Hampshire.	Nebraska.	New York, East.	New York, West.	New Jersey.	Ohio, North.	Ohio, Central.	Ohio, South.	Penn., East.	Penn., Central.	Penn., West.	Rhode Island.	Vermont.	Virginia.	Wisconsin.
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XIII.—RASPBERRIES.

No.	NAME.	COLOR.	Canada, West.	Canada, East.	Connecticut.	Delaware.	Dist. of Columbia.	Indiana, North.	Indiana, South.
1	American Black	Black.	--	--	--	--	--	--	--
2	Antwerp Red, of Hudson River	Red.	--	--	*	--	--	--	--
3	Antwerp Yellow	Yellow.	*	--	*	--	--	--	--
4	Belle de Palluan		--	--	--	--	--	--	--
5	Belle de Fontenay	Red.	--	--	*	--	--	--	--
6	Catawissa	Red.	--	--	*	--	*	--	--
7	Fastolt	Red.	--	--	*	--	--	*	*
8	Franconia	Red.	*	--	*	--	--	*	*
9	French *Vice-President. French.*	Red.	--	--	--	--	--	*	*
10	Knevett's Giant	Red.	--	--	*	--	--	--	--
11	Merveille des 4 Saisons	Red.	--	--	--	--	--	--	--
12	Orange *Brinckle's Orange.*	Yellow.	--	--	*	--	--	*	*
13	Ohio Everbearing	Black.	--	--	--	--	--	*	*

XIV.—BLACKBERRIES.

No.	NAME.	Canada, West.	Canada, East.	Connecticut.	Delaware.	Dist. of Columbia.	Indiana, North.	Indiana, South.
1	Dorchester	--	--	*	*	--	--	--
2	New Rochelle, or Lawton	--	--	*	*	--	--	--
3	Kittatinny	--	--	--	--	--	--	--
4	Wilson's Early	--	--	--	--	--	--	--

XIII.—RASPBERRIES.

No.	Illinois, North.	Illinois, Central.	Illinois, South.	Iowa.	Kentucky.	Kansas.	Maine.	Minnesota.	Michigan, North.	Michigan, South of Saginaw Bay.	Missouri.	Maryland.	Massachusetts.	New Hampshire.	Nebraska.	New York, East.	New York, West.	New Jersey.	Ohio, North.	Ohio, Central.	Ohio, South.	Penn., East.	Penn., Central.	Penn., West.	Rhode Island.	Vermont.	Virginia.	Wisconsin.
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XIV.—BLACKBERRIES.

No.	Illinois, North.	Illinois Central.	Illinois South.	Iowa.	Kentucky.	Kansas.	Maine.	Minnesota.	Michigan, North.	Michigan, South of Saginaw Bay.	Missouri.	Maryland.	Massachusetts	New Hampshire.	Nebraska.	New York, East.	New York, West.	New Jersey.	Ohio, North.	Ohio, Central.	Ohio, South.	Penn., East.	Penn., Central.	Penn., West.	Rhode Island.	Vermont.	Virginia.	Wisconsin.
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XV. — STRAWBERRIES.

The columns indicate — 1st. The Sex, as Hermaphrodite or Pistillate; 2d The Origin, American or Foreign; and the remainder the districts in which the varieties are recommended.

The abbreviations are: SEX — P., Pistillate; all others are Hermaphrodite. ORIGIN — A., American; F., Foreign.

No.	NAME.	SEX.	AMERICAN OR FOREIGN.	Canada, West.	Canada, East.	Connecticut.	Delaware.	Dist. of Columbia.	Indiana, North.	Indiana, South.
1	Alice Maude		F.					*		
2	Brighton Pine		A.							
3	British Queen		F.							
4	Boston Pine		A.							
5	Burr's New Pine	P.	A.	*					*	*
6	Crimson Cone	P.	A.							
7	Downer's Prolific		A.					*		
8	Fillmore		A.							
9	Genesee		A.							
10	Hooker		A.					*	*	*
11	Hovey's Seedling	P.	A.			*		*	*	*
12	Iowa		A.							
13	Jenny's Seedling	P.	A.							
14	Jenny Lind		A.	*		*		*		
15	La Constante		F.							
16	Large Early Scarlet		A.							
17	Longworth's Prolific		A.			*			*	*
18	McAvoy's Superior	P.	A.			*			*	*
19	Monroe Scarlet	P.	A.			*				
20	Moyamensing	P.	A.							
21	Scott's Seedling		A.			*				
22	Triomphe de Gand		F.	*		*	*		*	*
23	Trollope's Victoria		F.			*		*		
24	Walker's Seedling		A.			*				
25	Wilson's Albany		A.	*		*	*	*	*	*

XV. — STRAWBERRIES.

The columns indicate — 1st. The Sex, as Hermaphrodite or Pistillate; 2d. The Origin, American or Foreign; and the remainder the districts in which the varieties are recommended.

The abbreviations are: SEX — P., Pistillate; all others are Hermaphrodite. ORIGIN — A., American; F., Foreign.

No.	Illinois, North.	Illinois, Central.	Illinois, South.	Iowa.	Kentucky.	Kansas.	Maine.	Minnesota.	Michigan, North.	Michigan, South of Saginaw Bay.	Missouri.	Maryland.	Massachusetts.	New Hampshire.	Nebraska.	New York, East.	New York, West.	New Jersey.	Ohio, North.	Ohio, Central.	Ohio, South.	Penn., East.	Penn., Central.	Penn., West.	Rhode Island.	Vermont.	Virginia.	Wisconsin.
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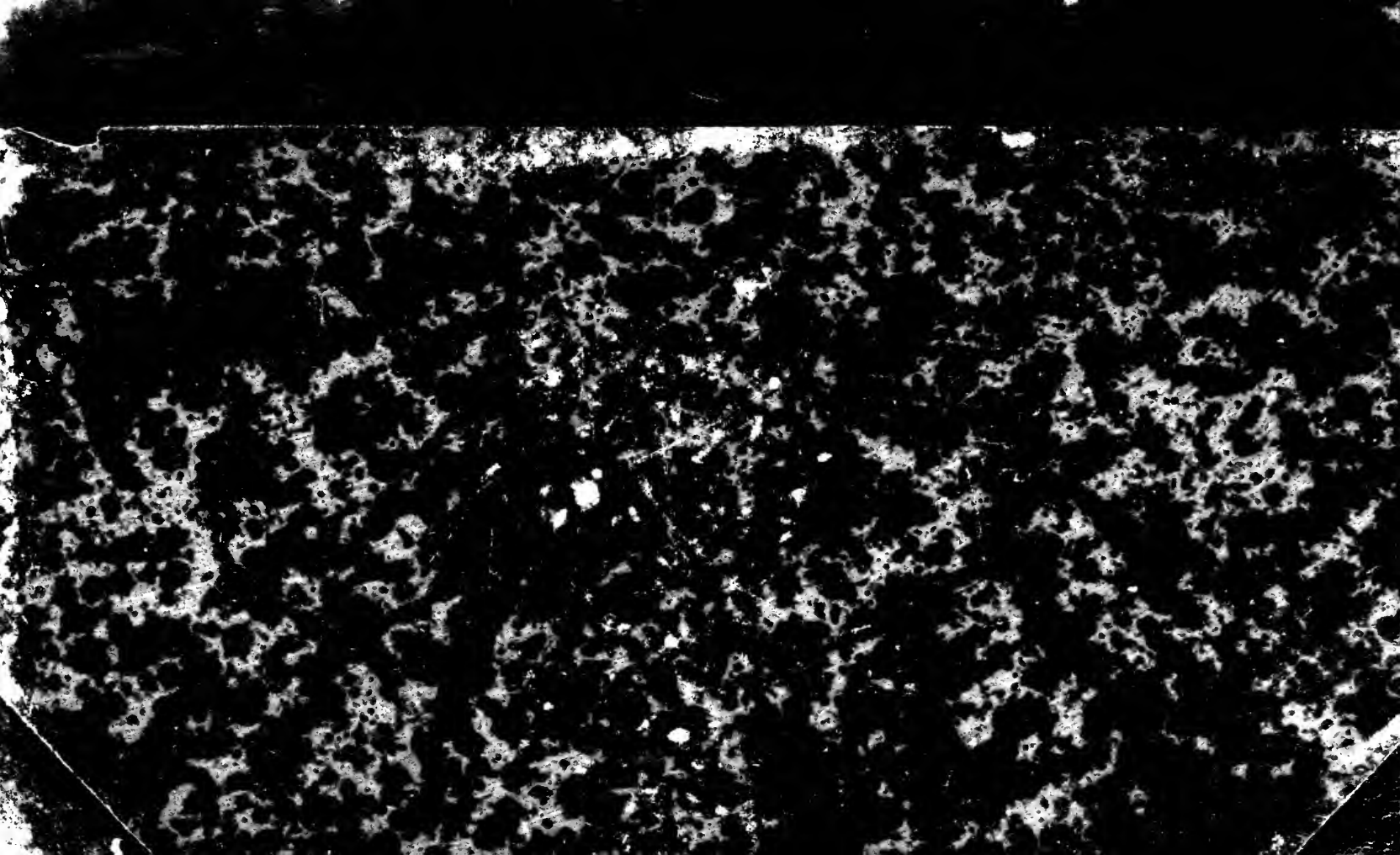
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